TOMALES BAY
STATE PARK
GENERAL PLAN

Partial **DRAFT**
Existing Conditions, Planning Influences and Issues Sections

APRIL 25, 2003

Gray Davis
Governor

Mary Nichols
Secretary for Resources

Ruth Coleman
Director of Parks and Recreation

State of California
The Resources Agency
Department of Parks and Recreation
P.O. Box 942896
Sacramento, California
94296-0001

General Plan Inquiries

The Tomales Bay State Park General Plan was prepared by the Department of Parks and Recreation Northern Service Center and North Bay District staff. For general information regarding this document, or to request additional copies, please contact:

California Department of Parks and Recreation
Northern Service Center
One Capitol Mall, Suite 500
Sacramento, California 95814

Attention: Tomales Bay State Park General Plan Team

Copyright

Table of Contents

INTRODUCTION

Location and Park Areas

The park is 40 miles north of San Francisco in Marin County, adjacent to Point Reyes National Seashore and near the communities of Inverness and Point Reyes Station. The park is comprised of seven separate land parcels located on the west and east shores of Tomales Bay, which was formed in the San Andreas fault depression. This plan groups these parcels into five distinct planning areas. The west shore areas include (from north to south) the Heart's Desire Area and the Inverness Area (comprising three parcels). The east shore areas include (from south to north) the Millerton Point Area, the Marconi Cove Area, and the Cypress Grove Area.

The 2,000-acre day-use park features four gently sloping, surf-free beaches, protected from winds by the Inverness Ridge, the backbone of the Point Reyes Peninsula. To date, the only developed recreational opportunities lie within the Heart's Desire and the Millerton Point Areas. The Heart's Desire Area is the original acquisition and includes the park's four popular quiet-water beaches as well as the Jepson Memorial Grove of Bishop pines. The Millerton Point Area has a day-use parking lot, a small picnic area, a pit toilet, and a popular trail.

Purpose of Acquisition

In the 1940s real estate developers began to purchase large areas of beachfront land in Marin County, prompting local residents and conservation groups to save this area as a park, preserving public access to its popular beaches. On November 8, 1952, Tomales Bay State Park was formally dedicated and opened to the public.

The park originally consisted of the four beaches (Shell, Pebble, Heart's Desire, and Indian Beaches) and the upland properties that now comprise the Heart's Desire Beach Area. Marin County gave Shell Beach to the State in 1950 and the county and private parties contributed $25,000 toward the $150,000 purchase by the State of the rest of the Heart's Desire Area Area.

Subsequent properties in the Inverness Ridge, Millerton Point, Marconi Cove, and Cypress Grove Areas were acquired for general recreational, viewshed, open-space, and natural resource preservation purposes.

Spirit of Place

Each place on the Earth has its own unique combination of geologic and atmospheric forces, lifeforms and ecosystems, and cultural influences. We can sum up these natural and cultural influences upon an individual as that area's "spirit of place." We are often oblivious to the unique spirit or sense of the places we visit in our hurried modern society because we are so goal-oriented to get something done or to get somewhere else. And our indoor-oriented lives dull our sensitivities to natural rhythms and patterns and to the remnants of previous cultures. Many are not aware of the deep sense of well-being that can be promoted by sustained contact with nature, and how we are literally dependent on the physical world around us. State Parks offer opportunities to reconnect to the natural world, benefiting visitors while at the park and benefiting the community in general after visitors return home with an enhanced sense of connection to the natural systems that sustain us. These opportunities depend on sensitive stewardship by Department employees and others to care for park resources in ways that preserve and optimize the local "spirit of place."

Each of California's state parks has a unique spirit or sense of place—a character or identity that holds a special value or meaning for the visitor. Most visitors sense the unique spirit of a park as they pass through the park entrance. They know they are in a special place set aside in perpetuity to preserve a special public value. The visitor might be only peripherally aware of it or they may be so aware of the park's spirit of place that it calls them back time after time. This spirit of place is really a sense of belonging—a bond between people and the land. This connection with the earth's landforms, lifeforms, weather, and waters is rare and especially valuable. Tomales Bay State Park is rich in such spiritual opportunity to reconnect with our Earth, and the legacy of the Miwok people who lived so close to the spirit of this place that they were one with it.

Tomales Bay Environmental Phenomena

Tomales Bay State Park lies within an environment molded daily by powerful natural forces, including the weather, the tides, and the movement of the earth's tectonic plates. The tectonic plates of the Pacific Ocean and the North American continent have long been grinding past each other in this stretch of the San Andreas Fault, periodically producing major earthquakes and forming the ocean-flooded valley that is Tomales Bay. The western peninsula between the ocean and the bay is geologically very different from the land on the eastern side of the bay, due to the fact that they exist on independent, moving tectonic plates. With parcels on both the western and eastern sides of the bay, the park exists on two different tectonic plates. An awareness of these phenomena can influence the visitor's experience in the park, producing feelings of wonder, awe, and perhaps fear that another earthquake may not be far in the future. Small vibrations in the fault may be felt on a subconscious level. The muffled roar of the ocean to the west can also influence the sense of nature's raw power that recreates this place. Awareness of these dominant physical phenomena can profoundly deepen a visitor's experience of the park.

At Tomales Bay State Park the visitor is also in one of the most biologically rich environments on the planet – one of transition between land and water. The Earth's "edge" environments contain a greater diversity of plant and animal species in a given area. Noticing the unique qualities of this area can enhance a visitor's sense of vitality and can lift the visitor out of the routines of daily life to experience a sense of re-creation, one of the primary goals of the State Park system.

The Park's Three Distinct Settings

The twelve-mile geologic rift of Tomales Bay sets the dramatic context for the park's five areas. The bay separates the western and eastern parts of the park but visually and recreationally connects them by water. Wherever one might be in the park, the bay is always a strong visual, geological, and emotional presence.

Visitors to the five areas of Tomales Bay State Park experience three distinct settings, each with its own sense of place. These three experiences are found respectively in 1) the Heart's Desire Area, 2) the Inverness Area, and 3) the three park areas strung like pearls along Highway 1 on the east shore. In addition to the geographical and landscape variation, the rapidly changing marine weather and bay conditions, including fog, add a particular mystique and dynamic spectacle to all park areas.

The Heart's Desire Area has a special charm that many have fallen under the spell of. This area has an isolated feel to it while also being inviting and intimate in scale. The visitor approaches the park entrance by passing through the charming villages of Inverness Park and Inverness along Sir Frances Drake Highway with Tomales Bay to the right and Inverness Ridge to the left. After turning off Sir Frances Drake Highway onto Pierce Point Road one enjoys the lush-looking Bishop pine forest to the right as the road climbs to the park entrance. After entering the park, the road descends through the forest and brushlands with magnificent vistas of the long stretch of Tomales Bay soon leading to the beach parking areas.

The beaches are small sheltered and shallow-water pocket beaches framed by dark forests of oak, alder, madrone, and laurel. All the beaches, except for Heart's Desire Beach itself, are backed by small estuaries. The surrounding granite bluffs are covered with ferns and other lush vegetation that overhang the intertidal and marine world of barnacles, crabs, clams, and jellyfish. At low tide visitors can leave footprints in the wet sand as they explore around the headlands from beach to beach. Shells, fish bones, and mammal tracks can be found along the shore. Curious harbor seals can often be seen poking their heads above the bay waters watching the beachcombers. The shell middens of the Coast Miwok people who lived on these beaches allow one to reflect on the centuries that people have been coming to this area for spiritual and material sustenance. One of the finest remaining virgin groves of Bishop pine in California is in the park's Jepson Memorial Grove, reached by way of a one-mile trail.

The three Inverness Ridge parcels are steep and have no developed public access points. This creates a very different visitor experience from the developed visitor facilities of the Heart's Desire Area. Local residents can hike on these lands from the end of local roads, perhaps without even knowing they are in a state park. Burned snags and thickets of young Bishop pines give evidence to the recent wildfire that threatened Inverness. Wide vistas open up at the top of the ridge revealing the full sweep of the dramatic interaction of the forces of earth, life, sea, and air that make the Point Reyes/Tomales Bay area so inspiring and breathtaking.

The three East Shore parcels, Millerton Point, Marconi Cove, and Cypress Grove share the flavor of Highway 1 that connects them. As mentioned previously, the only currently accessible east shore park area is the Millerton Point Area. Most people currently experience the three east shore park areas as beautiful open space and, where there is a pull-out, as potential wayside stops. Except for local visitors walking their dogs at Millerton Point, none of these park areas are now destinations for visitors and most are not even aware that state park lands occur here.

The parts of these parcels that are to the bayside of the road are flat bluffs or marshlands and the lands on the east side of the road are relatively steep grasslands that were once pasture lands. Whether motorists stop and use the park areas or not, they benefit from the open space and natural vistas preserved by state and federal parklands and traditional agricultural uses. Small communities, scattered marinas, views of sailboats and oyster and fishing vessels also provide richness to the sense of place. Unlike the heavily forested park areas in the west shore, the east shore parcels are largely open brushland and grassland and provide the motorist, picnicker, or hiker a relatively continuous visual and physical proximity to the bay. However, there are no beautiful tree-framed pocket beaches on the east shore park areas to attract beach recreationists.

Purpose and Scope of this General Plan

This General Plan was developed to serve as a long-range management tool that provides guidelines for achieving the purpose of the park. This document does not attempt to provide detailed management recommendations, but rather provides conceptual parameters for future management actions.

Why do we need a general Plan?

The Public Resources Code requires that a general plan be prepared prior to the development of permanent facilities.

A general plan:

- Becomes the primary management document for a unit
- Establishes the unit's purpose, vision, and long-term goals
- Defines a broad framework for a unit's development, management, and public use
- Serves as the basis for developing focused management plans and project plans
- Serves as a Programmatic Environmental Impact Report.

Where do we get the information?

- The general plan is based on an analysis of information contained in the Unit Data File and additional information gathered during the planning effort
- It is also based on systemwide planning and policies and input received from both the public and other agencies through the public involvement process

What is the scope of this plan?

A general plan considers the park unit within the larger context of the State Park System and the region. General plans provide general direction for the unit while avoiding specific details that could change before a project could be funded and implemented. Specific management details and facilities designs are deferred to future management plans and specific project development plans. General plans have no specific life span. They are revised when circumstances dictate.

The general plan is a tool for meeting the following broad objectives to:

1. Protect and perpetuate the unit's natural and cultural resources
2. Provide necessary facilities for visitor use to help meet current and future recreational demand
3. Determine appropriate interpretive services and facilities for educational and recreational purposes
4. Promote a safe, enjoyable, and well-managed visitor experience
5. Provide State Parks, federal, state, county agencies, private organizations, and individuals with a tool for coordinating their efforts to meet these objectives

Specifics, such as the exact location and design of a trailhead or how a vegetation management goal is met, will be determined by future management and project plans. These subsequent management or project plans will require additional data collection and Departmental and public reviews to ensure adherence to the goals and guidelines established within this General Plan.

The General Plan serves as a first-tier Environmental Impact Report (EIR), as defined in Section 15166 of the California Environmental Quality Act (CEQA) Guidelines. The analysis of broad potential environmental impacts discussed in the Environmental Analysis will provide the basis for future second level environmental review, which will provide more detailed information and analysis for site-specific developments and projects.

This General Plan, partnered with future management plans, endeavors to restore, maintain and interpret Tomales Bay State Park's natural and cultural resources, while providing opportunities for continued public use and enjoyment of this well-loved park. It is a job that will require the ability of management to respond appropriately as new challenges to the overall goals of this General Plan present themselves. The plan is a strategic framework for creatively responding to the park's major issues and opportunities in order to preserve the park's natural and cultural values and to benefit of all Californians.

EXISITING LAND USE, FACILITIES, INTERPRETATION, AND VALUES

The following section is a summary of the significant existing conditions at Tomales Bay State Park. The information was adapted from the resources inventory conducted as part of the general planning process and provides the baseline data for the development of all aspects proposed by the general plan. Additional documentation of existing conditions at Tomales Bay State Park is available from the Department of Parks and Recreation at the Northern Service Center in Sacramento and the North Bay District.

Existing Land Use within the Park

Park Land Use and Visitor Use Patterns

Existing land use at Tomales Bay State Park has been shaped by the geologic, environmental, historical and social influences that have formed present day west Marin. Topography, regional microclimates, vegetation diversity, public demand for recreation and preservation, and the Tomales Bay itself have all contributed to the visitor and land use activities within the park. Of the 2,224 acres currently owned by the park only about 160 acres contain visitor or administration facilities. The majority of park acreage is utilized for hiking, resource preservation, watershed conservation, and as wildlife habitat.

The desire for water access and water-based activities has been the major force affecting land use at Tomales Bay State Park. Beach recreation, kayaking, fishing, and wildlife viewing are the most popular activities. The majority of use associated with these activities occurs on a seasonal basis from April through October, with highest visitation occurring on weekends. The park has traditionally been used, both during the peak season and off-season, by west Marin residents with relatively little recognition or use by non-local visitors. Visitor use at the park is currently limited to day use activities. Other activities at the park include picnicking, trail hiking, and dog walking.

Due to the geologic dynamics of this region, there are distinct differences between the west shore and the east shore properties of the park. The following describes these two different sides of the bay and the land uses associated with them.

West Shore Areas

The Hearts Desire Area and the Inverness Area on the west shore offer hiking in the cool shade of dense coastal vegetation with the pungent aroma of California bay trees and the craggy silhouettes of old growth Bishop pines. Visitors can stroll along white secluded beaches while viewing abundant bay wildlife or picnic while enjoying panoramic bay views. Steep terrain, wide beaches, and abundant vegetation characterize the west properties of park. When viewed from Tomales Bay, the west shore appears as a patchwork of shades of green climbing up hillsides and dipping into valleys. Vegetation and topography help shelter these parcels from strong coastal winds and the deep bay waters allow for good boat access. This mosaic of rich vegetation, appealing beaches, and varied terrain has made the Heart's Desire Area popular for over fifty years. This popularity led to the acquisition of the Hearts Desire Area and the establishment of Tomales Bay State Park in 1952. All of the park's formal beaches, designated trails, and the vast majority of its day use visitor facilities as well as its staff residences and maintenance facilities occur within the Hearts Desire Area.

The Inverness area of the park, also located on the west side of the bay, consists of three disjointed properties separated by land owned by the Inverness Water Company and the Nature Conservancy. The area is characterized by dense coastal vegetation and steep terrain. Land use in these parcels consists of hiking, dog walking, fire fighting access, open space, and watershed preservation.

East Shore Areas

Hilly terrain, narrow beaches, annual grasslands, and tidal marshes characterize the east properties of the park. When viewed from Tomales Bay the east shore appears as a uniform texture of soft grasses rolling across the landscape, broken only by clusters of brush dotting the grasslands and strips of trees marking the creek drainages. The lack of large vegetation and the prevailing coastal winds often create windy conditions and shallow waters combined with difficult shoreline conditions make boat access problematic.

Acquired from the mid 1970's to 2002, many of the east shore properties are relatively recent additions to the park. Historic land use associated with these parcels has included ranching and shellfish farming. These historic land uses combined with harsher environmental conditions and the general lack of recreational facilities has led to minimal public use at these locations. Current land use occurring on these parcels includes wildlife viewing, dog walking, picnicking, and fishing.

Road Easements, Right-of-Ways and Encumbrances

Private property owners at Shallow Beach maintain a road easement, along Shallow Beach Road, through the park's Hearts Desire Area. This road easement provides the only access to the Shallow Beach Home Owners Association properties. Power lines running through the center of the Hearts Desire Area are located within a Pacific Gas and Electric 50' right-of-way. Property owners east of the park's Millerton Point Area maintain a 60' road easement through park property along Grand Canyon Road. Caltrans maintains a 50'-75' right-of-way along Highway 1. Marin County maintains a 50' right of way through the park's Inverness Area along Sir Francis Drake Boulevard.

Existing Facilities

Traffic Circulation

Sir Francis Drake Boulevard and State Highway 1 are the primary access routes to all areas of Tomales Bay State Park. Sir Francis Drake Boulevard provides access to the west shore parcels of the park. The park's Inverness Area parcels are accessed either directly from Sir Francis Drake or by fire and service roads, primarily Perth Road, extending from Sir Francis Drake Boulevard and Mount Vision Road. Pierce Point road intersects Sir Francis Drake Boulevard 2.5 miles north of the town of Inverness and connects to the park entrance road leading to Hearts Desire Beach. This route is the only officially-signed road access into the Hearts Desire Area. Camino Del Mar road, which intersects Sir Francis Drake Boulevard 1 mile north of Inverness, provides unsigned access to Shell Beach. Once inside the Hearts Desire Area of the park, parking is available at Hearts Desire Beach, the upper Hearts Desire Beach picnic area and Shell Beach. Hearts Desire Beach provides 64 parking spaces, Hearts Desire picnic area offers 80 spaces, and Shell Beach provides 15 spaces for park visitors. All beach parking areas fill to capacity in the Hearts Desire Area during peak season weekends.

Access to East shore properties of the park is provided directly from State Highway 1 but is generally quite limited due to lack of recreational development. Currently, the only formalized public access is at Millerton Point where an unpaved wayside pullout provides parking for vehicles. Gated nonpublic access to Grand Canyon Road is located on the east side of Highway 1 at Millerton Point. An informal pullout near Tomasini Point, located north of the Millerton Point pullout on Highway 1, provides parking for visitors wanting to hike the trail to Tomasini Point. Park maintenance access is provided to the Marconi Cove Area through a locked gate located directly off Highway 1.

Table 1: Traffic Counts for Highway 1 and Sir Francis Drake Boulevard

	Peak/ Month	Annual Average Daily Traffic
*Highway 1	6900	6500
**Sir Francis Drake Blvd	2193	1500

*State of California, Department of Transportation, Traffic Operations Division, 2001 traffic counts
**Marin County Public Works. June and July 1996. Counts taken at intersection of Sir Francis Drake Blvd and Pierce Point Road.

Trails

The only officially designated trails within the park are the Johnstone Trail (4 miles), Jepson Trail (1.1 miles) and the Indian Beach Nature Trail (.5 miles) located in the Hearts Desire Area. These unsurfaced trails are available to both hikers and equestrians. There are no official connections between designated trails located in the park and other regional trail systems.

Unofficial trails also exist inside the boundaries of Tomales Bay State Park. These trails are primarily used by local residents for nature hiking, dog walking, and fishing access. The Millerton Areal has a 1-mile loop trail, formerly a ranch road, starting and ending at the Millerton wayside pulloff parking lot and a 1.3 -mile trail starting from an informal pull-out along Highway 1 and ending at Tomasini Point. There are numerous unofficial hiking routes within the park's Inverness Area to include both fire road and single-track trails connecting residences on Inverness Ridge to the Point Reyes National Seashore.

Day Use Facilities

Beaches

Beach-related activities are the principle form of recreation at Tomales Bay State Park. All formally designated beaches are located within the Hearts Desire Area and include Indian Beach, Hearts Desire Beach, Pebble Beach, and Shell Beaches 1 and 2. Hearts Desire Beach is the most popular beach at the park. This popularity is due to the close proximity of parking and ease of access for park visitors. The parking lot for the upper picnic area, located uphill from the beach, serves as overflow parking for Hearts Desire Beach. Pebble Beach is accessed by way of a .25 mile trail from the upper picnic area parking lot and Indian Beach is accessed by way of a .25 mile trail from the Heart's Desire Beach parking lot. These beaches tend to be less crowded and offer visitors a quieter and more natural beach experience. Shell Beaches 1 and 2 are accessed from the Shell Beach parking area by way of a ¼ mile trail. Shell Beach is primarily used by local residents and those familiar with the Tomales Bay region. Restroom facilities are provided at all beach locations.

Picnic Areas

The primary picnic facility within the park is located in the park's Hearts Desire Area and is accessed via the picnic parking lot located near Hearts Desire Beach. This site offers visitors 45-50 picnic tables situated on a vegetated bluff overlooking Tomales Bay. The site offers a variety of picnicking environments encompassing everything from secluded picnic tables screened from other tables to large open areas with multiple picnic tables and panoramic views of Tomales Bay. Although many of the picnic tables are grouped together, there are no official group picnic areas located at Tomales Bay State Park. Other picnicking opportunities are available at Hearts Desire Beach and at the Millerton Point parking lot. These sites consist of scattered picnic tables.

Overnight Facilities

There is currently no overnight use at Tomales Bay State Park. Facilities for a hike/bike camp do exist near the picnic area in the Hearts Desire Area and consist of 6 sites with food lockers, picnic tables and grills. These sites were never popular with either hikers or bicyclists but they had become popular with motorized visitors who wanted to camp in the area. Since the park was closed at night and visitor vehicles were not allowed in the park overnight visitors had to park their cars outside the park and walk down the Jepson Trail to the campsites. The park closed these sites in July 2002 due to the operational awkwardness of this situation.

See ***Table 2*** for a list of existing facilities in Tomales Bay State Park.

Operations Facilities

The majority of park operations facilities are located in the park's Hearts Desire Area, including the park ranger office and entrance fee collection area. The maintenance facility is located downhill from the ranger office and consists of a maintenance shop, indoor/outdoor vehicle and equipment storage, trailer pad, and fuel station for park vehicles. Also located in this parcel is an outdoor storage area known as the "Bone Yard", where old equipment, building supplies, and debris are stored. Two employee residences are located downhill from the "Bone Yard".

Two operations facilities are located outside the park's Hearts Desire Area. One employee residence is located at Millerton Point and two abandoned trailers and derelict structure are located in the Inverness Area along North Dream Farm Road.

Utilities

The water system at the Hearts Desire Area utilizes a well and pump, located at the Bone Yard, to lift water into a 50,000 gallon storage tank located in the same area. Water is then distributed by means of a gravity system to facilities located in the Hearts Desire Area to include the ranger office, park residences, the maintenance facility, the Hearts Desire Beach restroom and the upper picnic area restroom. An additional 40,000 gallon water tank stores non-potable water for fire emergencies. A well and pump system provides water to the park residence located at Millerton Point.

Pacific Gas and Electric provides electricity to the park. Electricity is provided to the same park facilities mentioned above as being served by the water system. Electricity is distributed through the Hearts Desire Beach area from the primary PG&E overhead power line located in the vicinity. A smaller overhead power line connects to the primary line and provides electricity to the Hearts Desire park residence. Electricity is then run to the ranger office and maintenance facility utilizing buried lines. Electricity is also available to the park residence located at Millerton Point and the North Dream Farm Road property.

Septic systems are utilized at all indoor plumbing facilities located within the park to include the following locations: (Hearts Desire Area) ranger office, residences, maintenance facility, Hearts Desire Beach restroom, and upper picnic area restroom, and the Millerton Area residence. Septic system capacities range from 1200 gallon to 1800 gallon. All other restroom facilities utilize 250-gallon vaults that are emptied approximately 2-3 times per year.

TABLE 2: Existing Facilities TOMALES BAY STATE PARK								
#	Item	Parcel	Description	ADA Access	# of Picnic Tables	# of BBQ Pits	# of Parking Spaces (185)	Comments
1	Headquarters Building	Hearts Desire	Admin.	No		0	6	Fee Collection, Ranger office, Information
2	Bone yard	Hearts Desire	Maintenance	No	0	0	0	Well, water pump and water storage tank
3	Maintenance Facility	Hearts Desire	Maintenance	No	0	0		Fuel station, equipment storage
4	Maintenance Trailer Pad	Hearts Desire	Residence	No	0	0	0	Located in Maintenance area
5	Hearts Desire Residence 1	Hearts Desire	Residence	No				
6	Hearts Desire Residence 2	Hearts Desire	Residence	No				
7	Hearts Desire Trailer Pad	Hearts Desire	Residence	No	0	0	0	Located Near HD Residence 1
8	Indian Beach	Hearts Desire	Beach	No		0	0	Overnight education, 1/2 mile hike from Hearts Desire Parking
9	Hearts Desire Beach	Hearts Desire	Beach	Yes	17	10	64	Bulletin boards Picnic Facilities
10	Picnic Area Hike/Bike	Hearts Desire	Day Use	No			80	6 former hike/bike camp sites, 6 food lockers
11	Pebble Beach	Hearts Desire	Beach	No			0	1/2 mile hike from Hearts Desire Parking
12	Shell Beach 1	Hearts Desire	Beach	No	0			1/4 mile hike from Shell Beach Parking
13	Shell Beach 2	Hearts Desire	Beach	No	0			1/4 mile hike from Shell Beach Parking
14	Jepson Trail	Hearts Desire	Trail	No	N/A	N/A	N/A	Hiking and Equestrian
15	Johnstone Trail	Hearts Desire	Trail	No	N/A	N/A	N/A	Hiking and Equestrian
16	Indian Beach Nature Trail	Hearts Desire	Trail	No	N/A	N/A	N/A	Interpretive signage
17	Dream Farm Residence	Inverness	Residence	No	0	0	2	Residence currently abandoned
18	Dream Farm Trailer 1	Inverness	Residence	No	0	0	0	Abandoned
19	Dream Farm Trailer 2	Inverness	Residence	No	0	0	0	Abandoned
20	Millerton Pull-out	Millerton	Day use	No		0	30	Unofficial trail Loop, Picnic tables
21	Millerton Residence	Millerton	Residence	No			3	
22	Marconi Cove	Marconi	Day Use	No	0	0		Well located on site, Boat ramp located on site, equipment storage and abandoned building

TABLE 3. Utilities TOMALES BAY STATE PARK								
FACILITY	**PARCEL**	**GAS**	**PHONE**	**PAY PHONE**	**RESTROOM**	**RR TYPE**	**WATER**	**POWER**
Headquarters Building	Hearts Desire	Yes	Yes	1	Yes	Septic	Yes	Yes
Boneyard	Hearts Desire	No	No	0	No	N/A	Yes	Yes
Maintenance Facility	Hearts Desire	Yes	Yes	0	Yes	Septic	Yes	Yes
Maintenance Trailer Pad	Hearts Desire	No	No	0	Yes	Septic	Yes	Yes
HD Residence 1	Hearts Desire	Yes	Yes	0	Yes	Septic	Yes	Yes
HD Residence 2	Hearts Desire	Yes	Yes	0	Yes	Septic	Yes	Yes
HD Trailer Pad	Hearts Desire	Yes	Yes	0	Yes	Septic	Yes	Yes
Indian Beach	Hearts Desire	No	No	0	Yes	Pit	Yes	No
Hearts Desire Beach	Hearts Desire	Yes	No	0	Yes	Septic	Yes	No
Picnic Area Hike/Bike	Hearts Desire	Yes	No	0	Yes	Septic	Yes	No
Pebble Beach	Hearts Desire	No	No	0	Yes	Pit	No	No
Shell Beach 1	Hearts Desire	No	No	0	Yes	Pit	No	No
Shell Beach 2	Hearts Desire	No	No	0	Yes	Pit	No	No
Jepson Trail	Hearts Desire	No	No	0	No	N/A	No	No
Johnstone Trail	Hearts Desire	No	No	0	No	N/A	No	No
Indian Beach Nature Trail	Hearts Desire	No	No	0	No	N/A	No	No
Dream Farm Residence	Inverness	No	Yes	0	Yes	Septic	Yes	Yes
Dream Farm Trailer 1	Inverness	No	No	0	No	N/A	No	No
Dream Farm Trailer 2	Inverness	No	No	0	No	N/A	No	No
Millerton Pull-out	Millerton	No	No	0	Yes	Pit	No	No
Millerton Residence	Millerton	Yes	Yes	0	Yes	Septic	Yes	Yes
Marconi Cove	Marconi	No	No	0	No	N/A	Yes	Yes

Phone service to the park is provided by Pacific Bell. A pay phone is located at park headquarters. The ranger office, the Hearts Desire Area residences and maintenance facility, and the Millerton Area residence use individual LPG tanks to provide space and water heating. A utilities inventory for Tomales Bay State Park facilities is listed in ***Table 3***.

Existing Park Interpretation

Interpretation helps visitors gain understanding and appreciation of the significant stories of the park's natural, cultural and recreational values. The greatest opportunity to forge a meaningful connection to the stories of the park occur in the area of Heart's Desire Beach and Indian Beach, the largest archeological site in the Park.

Environmental Living Program

The park's popular environmental living program (ELP) offers children an overnight park experience that explores the interaction between people and their environment. The program at Tomales Bay State Park started twenty-five years ago and is the only Native American ELP currently offered by State Parks. School groups come from as far north as Chico and Paradise, from the east side of the Sierras and from as far south as Santa Cruz. Since the demand for the program is greater than the space available, an annual lottery provides tentative dates to over half of the teachers requesting spots. This program requires each class teacher to participate in a two-day workshop held in mid-September at the park and up to six parents or aides per class are encouraged to attend. During the past eighteen years, a strong volunteer force of five teachers has assisted the ranger conducting the workshop.

This program serves up to 700 children per year. Each Thursday during the spring and fall months a class of 30 to 35 fourth, fifth or six graders arrive at Heart's Desire Beach parking lot to participate in this overnight program. As the children hike the trail to their overnight destination at Indian Beach they step back in time to role-play a pre-European contact Native California Indian life-style. This program is conforms to the California History Educational Standards and functions as an extension and enrichment of the classroom learning of social studies of California's rich heritage.

Other Interpretive Programs offered in the Park

The interpretive ranger also presents day-use programs at the park on the Coast Miwok, geology, and the water quality of Tomales Bay. Before the "Hike-and Bike" campground closed, campfire programs were offered to groups who used that campground.

Outreach Programs

The interpretive ranger also presents off-site interpretive programs at local schools and for senior citizens camping in recreational vehicles at the private Olema Ranch campground. The interpretive ranger occasionally assists with a program for 200 eighth graders at *Kule Loklo*, a replica Coast Miwok village at the Point Reyes National Seashore. The story of the Coast

Miwok is the most common topic. Interpretive objects used in demonstrations for these presentations include skins, baskets, and obsidian.

Interpretive Information

Printed interpretive information on the park is currently limited to the park brochure and a leaflet on mushroom identification, prepared in cooperation with the Mycological Society of San Francisco.

Self-Guided Nature Trail

A self-guided nature trail from Heart's Desire Beach to Indian Beach has thirteen interpretive plates identifying native plants and how they were used by the Coast Miwok.

Wayside Exhibits

Six interpretive panels currently exist in the park (displayed in four wayside panel exhibits structures). Five of these exhibit panels occur in the general area of the Heart's Desire Beach parking lot and the sixth panel occurs at the beginning of the Millerton Point loop trail. The locations and themes of these panels are as follows.

Heart's Desire Beach. By the restroom and entrance to the nature trail a single interpretive panel introduces the nature trail and Coast Miwok use of plants. Two two-sided interpretive wayside exhibit structures placed between the parking lot and the beach display four panels covering the following topics:
Clams and Cockles
Boating Guide and General Information
Fire Ecology of the Bishop Pine Forest
The Coast Miwok's World Creation Story

Millerton Point. At the beginning of the Millerton Point loop trail a single panel interprets an osprey nesting site usually occupied February through May.

Interpretive Use by other Groups

Tomales Bay State Park is a popular destination for many groups interested in the natural history of the area. These groups do not use the interpretive resources of the Park staff, but bring their own expertise. These experts provide informal programs ranging in topics from birds, mushrooms, seashore life, nature and geology. Some these groups are associated with Point Reyes Bird Observatory, Marin County Open Space, Mycological Society, or the College of Marin.

Collections

Artifacts excavated from the park by Tom Wheeler in the 1990s are stored in the archeology laboratory facility in West Sacramento. Artifacts excavated by Clem Meighan in 1952 are in the Phoebe Hearst Museum at the University of California at Berkeley. A few artifacts recovered from middens at Tomales Bay State Park are stored at the park. A deep mortar is one of the most interesting artifacts stored at the park. Non-archelogical interpretive props (modern reproductions) used for hands-on demonstrations include various animal skins, coiled baskets and a mortar and pestle.

Park Interpretive Support

There is currently no interpretive association for Tomales Bay State Park. All of the interpretive services conducted at Tomales Bay State Park are provided by the current interpretive ranger, Carlos Porrata. The main volunteer effort occurs with the teacher support of Environmental Living Program.

Significant Natural Resource Values and Constraints

Climatology

Tomales Bay, located on the Point Reyes Peninsula, has a humid Mediterranean climate. Rainfall occurs primarily in the cool, wet, winter season that normally extends from November to March. The average rainfall varies from 20 to 40 inches/year along the Point Reyes Peninsula, depending upon the proximity to the coast and the topography. For Tomales Bay State Park, the range is 30 inches/year on Inverness Ridge to 24 inches/year on the east side of Inverness Ridge and across Tomales Bay. The summers are dry, with coastal fog commonly occurring from July through September. The fog forms due to the warmer ocean air moving inland over the colder near-shore waters. Inverness Ridge forms a barrier to the fog, so that the Olema Valley and Tomales Bay may be sunny and warm while fog shrouds the area west of the ridge.

The average temperature varies little between the winter average of 50° F and a summer average of 55° F, due mainly to the moderating influence of the Pacific Ocean. Inland areas generally have higher temperatures in the summer than areas closer to the coast.

Air Quality

Generally, the air quality in Marin County is very good due to a favorable climate and lack of air pollution sources. The air pollution potential is highest on the eastern side of Marin County where the largest population centers are located. In the Tomales Bay area, the low population density contributes to good air quality. In addition, the prevailing winds are from the west off the ocean, so there are no upwind sources of pollution.

The only air monitoring station in Marin County is located in San Rafael, approximately 25 miles southeast of Tomales Bay SP. Only ozone and PM-10 exceeded ambient air quality standards in the five years from 1996 to 2000 at the San Rafael monitoring station. Conditions monitored in the urban setting of San Rafael will be different than Tomales Bay SP, as Tomales Bay has a rural setting and is closer to the ocean. The ozone levels for Tomales Bay SP are less than 70 parts per billion, below the ambient air quality standard (Federal) of 80 ppb.

Some sheltered valleys in Marin County are susceptible to localized PM-10 buildup and CO emissions during the winter. The poor dispersion characteristics of these valleys plus wood-burning activities and vehicle emissions could lead to air quality standards being exceeded locally. However, levels are not known since the Bay Area Air Quality Management District does not monitor pollutant concentrations in the more rural areas.

Geology

Geologic Setting

Tomales Bay State Park is located in the central Coast Range Geomorphic Province that extends 600 miles along the California coast from the Klamath Mountains in the north, south to the Transverse Ranges and east to the Central Valley. This province is characterized by northwest-trending ranges and valleys subparallel to the San Andreas Fault. Tomales Bay, a drowned rift valley, owes its existence to geologic forces, specifically movement along the San Andreas Fault Zone (SAFZ). This fault zone marks the boundary between the North American plate to the east and the Pacific plate to the west. The rock types are different in both age and composition on either side of the SAFZ, resulting in different topography, soils, vegetation, and wildlife on the opposite sides of Tomales Bay.

Bedrock on the east side of the SAFZ consists of the 80-140 million year old Franciscan Formation, a heterogeneous assemblage of clay-rich greywacke sandstone, shale, chert, and greenstone (metamorphosed volcanic rock). Isolated outcrops of the late Pleistocene Millerton Formation occur overlying the Franciscan Rocks. On the western side of the SAFZ, bedrock consists of Upper Cretaceous granitic and older metamorphic rocks of the Salinian Block that form the backbone of Inverness Ridge. To the west of Inverness Ridge, younger Miocene to Pliocene (12-5 million year old) marine sedimentary rocks overlie the granitic and metamorphic rocks. These sedimentary rocks are not found within the Tomales Bay SP boundaries. On both sides of the SAFZ, younger alluvial sediments occur along stream channels and beaches.

Geologic Formations

<u>Metamorphic Rocks – West Side of Fault Zone</u>
The oldest rocks in the park are roof pendants containing metamorphic rocks such as mica schist and marble, with some quartzite, scattered within the granitic rocks of Inverness Ridge. These rocks are the remnants of the sedimentary rocks (shales, sandstones, and limestones)

that were invaded and metamorphosed by the intrusive granitic rocks approximately 80-100 million years ago during the Cretaceous Period.

Granitic Rocks – West Side of Fault Zone

The Cretaceous granitic pluton that composes Inverness Ridge consists mainly of quartz diorite and granodiorite (see igneous rock classification in the appendix). The rock is broken by jointing and other fractures into 1 to 6 inch blocks, and is cut by faults in some areas. Weathering is pervasive and deep (as much as 60 feet), resulting in a decomposed sandy material.

Millerton Formation - East Side of Fault Zone

The sedimentary Millerton Formation, of late Pleistocene Age (approximately 50,000 years old), consists of fossil-bearing marine and non-marine clays, silts, sands, gravels, and conglomerates that are deeply weathered and poorly consolidated. Fossils found include numerous invertebrate species of pelecypods (bivalves), gastropods (snails), and arthropods (segmented animals, such as crustaceans). Within Tomales Bay SP, the Millerton Formation occurs on the headlands (Millerton and Tomasini Points) on the northeast side of Tomales Bay. This formation is confined to the San Andreas Fault Zone and was likely deposited in an environment similar to the existing Tomales Bay mudflats and freshwater lagoons). Subsequent uplift on the order of several hundred feet has exposed the rocks along the east side of Tomales Bay.

Franciscan Formation

The Franciscan rocks were deposited as muds, sands, and lava flows on the sea floor 80-140 million years ago (Jurassic to Cretaceous Period). Burial and then subduction of these materials beneath the North American continental crust subjected them to low-grade metamorphism, shearing, and crushing. Then, subsequent uplift thrust these rocks to the surface, along with incorporated bodies of serpentine (former ocean crust). The result is Franciscan mélange, a mostly sheared sandstone and shale with some coherent blocks of rock.

Recent Alluvium

Alluvium occurs on both sides of the SAFZ, along stream channels and on the flat lands and beaches lining Tomales Bay. The alluvium on the west side of the SAFZ, derived from the granitic rock, is largely a coarse- to medium-grained sand, with gravel and finer materials. Alluvium derived from the Franciscan rocks east of the SAFZ contains a higher percentage of finer silts and clays, with angular sands and gravels of chert, greenstone and sandstone.

Mineral Deposits

Information on ore deposits within Tomales Bay SP is limited. Tungsten-bearing ore (scheelite) was discovered near a limestone quarry in Inverness Park. The ore was associated with the mica schist in a roof pendant. Other outcrops of mica schist within the park may also contain scheelite. The Borello Quarry, located south of the Millerton acquisition east of Highway 1, is developed in the Franciscan Formation. The rock types mined for road base and drain rock were sandstone, shale, greenstone, chert, and pillow basalts. Similar materials may be present on park property in the vicinity.

Geologic History

Rocks on the west side of the SAFZ are part of the Salinian Block, an "exotic" block that has been transported north by movement along the SAFZ. These rocks are also called the Sur Series because they are similar to rocks exposed in Big Sur, California. The oldest metamorphic rocks, found on Inverness Ridge, started out as sedimentary rocks deposited as sandstone, shale and limestone approximately 350 million years ago (Paleozoic Era) far to the south near the current location of Central America. They were intruded by the granitic rocks about 60-100 million years ago (Middle to Upper Cretaceous Period) and metamorphosed due to the heat and pressure. Uplift and erosion has removed much of the metamorphic rocks and exposed the granitic rocks. Several periods of submergence and uplift deposited and eroded the sedimentary rocks found west of Tomales Bay SP on the Point Reyes peninsula. Starting approximately 28 million years ago, movement on the SAFZ of approximately 1.0 to 0.5 inch/year has transported these rocks to their present location. They continue to move northward at the same rate.

The Franciscan rocks were originally deposited as sands and shales by turbidity currents (underwater landslides) in deep ocean waters during the Jurassic and Cretaceous periods (65-200 million years ago). The deposition occurred in an offshore subduction zone trench. These sediments were then transported westward on the Pacific tectonic plate and subducted underneath the North American continent. Some of the rocks were scraped off the subducting plate and, along with pieces of the ocean crust and mantle (basalt, chert and serpentine), became attached to the North American continent. The relatively quick burial resulted in only low-grade metamorphism of the Franciscan rocks. Around 6 to 10 million years ago, the SAFZ had extended from the south to the area of Tomales Bay, and the plate boundary movement shifted from subduction to right lateral movement, bringing the granitic and metamorphic rocks of the Salinian block adjacent to the Franciscan rocks.

Geologic Hazards

<u>Seismic Hazards</u>
The San Andreas Fault Zone (SAFZ) is a predominate feature that slices through the park and is responsible for the formation of Tomales Bay. The 1906 earthquake epicenter was located near the town of Olema at the southern end of Tomales Bay. The SAFZ in this area is capable of generating an earthquake of magnitude 7 or greater every 75 to 300 years, with as much as ten feet of horizontal ground displacement. The Alquist-Priolo Earthquake Fault Zone maps show that parts of Tomasini and Millerton Points (Tomales Bay SP) fall within the zone, defined as 50 feet on either side of the active fault trace. Restrictions apply to building within this defined fault hazard zone and a geologic investigation is needed before a project can be permitted by the local agencies.

Earthquake-induced damage resulting from ground shaking, ground surface rupture, liquefaction, lateral spreading, landsliding, possible tsunamis, and seiches (earthquake-induced water waves) can be expected within Tomales Bay SP. Ground shaking is the primary cause of damage during an earthquake. The underlying geologic materials affect the intensity and the duration of the shaking experienced. Ground surface rupture affects only a limited area where the ground actually breaks and moves both vertically and horizontally. Liquefaction occurs when loose, unconsolidated, water-saturated sediments are subjected to shaking during an earthquake. The sediments liquefy from the increased pore water pressure and lose their strength. Liquefaction causes ground failures such as lateral spreading, landslides (mud and debris flows), fissuring, and loss of bearing strength, which can lead to damage to and collapse of structures.

The loose surficial deposits on both side of Tomales Bay are more susceptible to ground shaking, liquefaction, differential settlement, and shallow slope failures. These areas include the alluvial stream valleys and the shoreline, estuaries, and marshy areas along Tomales Bay. Areas underlain by the younger, poorly-consolidated Millerton Formation (Millerton and Tomasini Points) are also susceptible to earthquake-induced damage. Damage observed in the Tomales Bay area after the 1906 earthquake were shallow cracks in alluvium (in small estuaries near Inverness) and on hillslopes, bedrock cracks in numerous areas, landslides on steep slopes, and shifting of mudflats along the bay.

The Geologic Hazards Map (not included in this draft) shows liquefaction and landslide susceptibility within Tomales Bay SP. Liquefaction ratings of very high to very low based upon factors such as type and age of geologic unit and the depth to groundwater.

Tsunamis and seiches are water waves that can be triggered by earthquakes. Tsunamis are generated in the ocean and travel harmlessly until they reach land. In the shallower water, the wave increases in height and can inundate low lying areas. The amount and extent of damage is determined by the wave runup (rush of water up the beach) and the horizontal distance the runup penetrates inland (inundation). Seiches are waves that are generated in an enclosed or semi-enclosed water body such as Tomales Bay. Currently there are no tsunami or seiche inundation maps for the Marin County coast. However, any low-lying areas around the bay margin (beaches and estuaries) should be considered susceptible to inundation by both tsunamis and seiches, should they occur.

Disruption of water supplies from groundwater wells and springs may also occur after an earthquake. The disruption may be due both to changes in natural groundwater flow and damage to water supply lines due to ground rupture or severe shaking. Disruption of electrical, telecommunications, and sewage lines may also occur due to shaking and ground rupture.

Landslides

The sheared Franciscan mélange on the east side of the SAFZ is subject to landsliding, specifically slow-moving debris flows and soil creep. Debris flows can occur naturally as a result of erosion of the sheared rocks or by earthquake shaking, but can be triggered or accelerated by human-caused land disturbances such as grading, road building, removal of vegetation, and introduction of surface and subsurface water from irrigation and septic leach field systems. The Franciscan mélange rocks usually develop soils with high clay content, usually montmorillonite, which has a high shrink-swell potential. These soils have low shear strength when wet and the repeated shrinking and swelling contributes to downslope soil creep. The poorly consolidated Millerton Formation is susceptible to slumping. Several small failures were observed at Millerton Point, some possibly exacerbated by runoff concentrated and channeled by bluff-top roads and trails.

Landslides can also occur on the west side of the SAFZ in the Inverness granitic rocks. While these weathered rocks tend to support steep roadcuts under fairly dry conditions, saturation with water during heavy rains or from leaking water or sewer lines can result in slope failures. A large landslide (debris flow) occurred on the east slope of Inverness Ridge in 1982, in an area that had previously been relatively free of landslides. During a period of intense rainfall, the decomposed granitic rock became saturated and failed, resulting in debris torrents that moved along drainages as fast as 32 feet/second. The debris torrent scoured away the decomposed material in the drainage down to fresh bedrock and deposited the sediments, along with toppled trees and other vegetation, on the flat canyon bottoms. This flow occurred in an unnamed drainage in the Dreamfarm Road area. The Geologic Hazards Map (not included in this draft) designates areas that may be susceptible to landsliding in the future.

Erosion

Human activities within the Tomales Bay watershed have altered the landscape, resulting in increased sediment and nutrient input to Tomales Bay. On the east side of the bay, historic land uses such as farming and ranching have contributed and still are contributing to surficial erosion. Cattle-induced erosion from trampled streambanks and steep terraced cattle trials are declining now that grazing has been removed from the Millerton and Tomasini Point acquisitions on the east side of Highway 1. In the Inverness Area, erosion from firebreaks has decreased as these have been removed following the Mount Vision fire. However, other areas near the same locations have seen an increase in erosion due to installation of new firebreaks and the run off along existing fire roads, loss of vegetation, exposed soils and concentrated runoff.

Topography

Tomales Bay State Park is located within the Coast Ranges geomorphic province and borders the dominant topographic feature of the area, Tomales Bay. Tomales Bay is a narrow marine embayment formed by the underlying San Andreas Rift Zone. The San Andreas Rift Zone is responsible for the northwest trending orientation of the ranges and valleys in this area. Park topography consists of level land along the shore of Tomales Bay rising steeply west nearly to the crest of Inverness Ridge and less steeply east to the about the mid-slope of Bolinas Ridge.

Elevations in the state park range from sea level to approximately 1240 feet on Inverness Ridge near the summit of Mount Vision, which lies within the boundary of the adjoining

Point Reyes National Seashore. The Inverness Ridge portion of the park has greater topographic relief than parklands east of Tomales Bay. Inverness Ridge slopes typically are 30 percent or greater, exceeding 50 percent on the uppermost slopes. East of Tomales Bay slopes average less than 10 percent at Millerton Point and locations west of Highway 1. Slopes east of the highway average about 25 percent, but can be as steep as 50 percent.

The park is drained by numerous small, permanent, and intermittent streams that empty into Tomales Bay. Millerton Gulch is the largest stream draining lands east of the bay. Inverness Ridge parcels are drained by several unnamed streams, most of which are intermittent.

Soils

Tomales Bay State Park is located in the Northwestern Coast Ranges Soil Region (Soil Region 1), as described by E. R. Storie. Soil Region 1 encompasses steep mountain ranges and small valleys of the Coast Ranges from the Santa Cruz Mountains north to the Oregon border. This region has a temperate climate of cool, dry summers and wet winters with moderate temperatures. The most common vegetation is coniferous forest, typically dominated by redwood, Douglas fir, and tanbark oak.

Twenty-three soil mapping units occur in the park, eighteen of which are classified into one of twelve defined soil series. These soils are derived from igneous or sedimentary rocks, or alluvium from various kinds of rocks. Most of the park's soils are moderately deep to very deep, typically exceeding 31 inches in depth. In general, an increase in slope corresponds with a decrease in the depth of a soil; hence soils found on Inverness Ridge are more shallow than those on the east side of Tomales Bay. The erosion potential for park soils is mostly moderate to high. Drainage of soils varies widely, ranging from poorly drained to somewhat excessively drained.

The most common soils on the west side of the park are those of the Sheridan series, which are moderately deep, well drained, and have a moderate to high erosion potential. The most common soils east of Tomales Bay are those of the Olompali, Los Osos, and Bonnydoon Series. Olompali soils are deep, somewhat poorly drained, and have a moderate to high erosion potential. Los Osos soils are moderately deep, well drained, and have a moderate to high erosion potential. Soils of the Bonnydoon Series are shallow, somewhat excessively drained, and have a moderate to high erosion potential.

The U.S. Department of Agriculture's Natural Resources Conservation Service has evaluated the suitability of Marin County soils for various uses. Potential land uses that have applicability for DPR units are camp and picnic areas, trails, dwellings without basements, and septic tank absorption fields. Soil limitation ratings are moderate to severe for all of these uses on every park soil. Most areas are rated as severe. The most common limiting factors are slope, depth to rock, and slow percolation. Careful planning and a greater investment of resources can overcome moderate to severe limitations.

Hydrology and Water Resources

The Tomales Bay watershed encompasses approximately 219 square miles of rugged terrain, and extends from Mount Tamalpais and Bolinas Ridge east to the headwaters of Walker Creek and Nicasio and Lagunitas Creeks, and west to the Inverness Ridge. The watershed includes a rich variety of plant communities including Bishop pine forests, mixed evergreen forests of Douglas fir, oak and bay, annual and perennial grasslands and rangelands, coastal strand and prairie, marshes, and beaches and dunes. Agriculture is the primary land use within the watershed for dairy, beef cattle, and sheep production.

Tomales Bay proper opens to the Pacific Ocean at the northern end just south of Bodega Bay and extends 12 miles to the southeast along the San Andreas Fault Zone. The bay is 0.4 to 1.5 miles wide and averages less than 20 feet in depth. This linear shape and its narrow mouth act to constrain tidal exchange with the ocean. The bay alternates between fresh water in the rainy winter months and hypersaline during the dry summer months. Seasonal fluctuations in nutrient levels and salinity result from variations in the strength of the coastal upwelling and freshwater inflows primarily from Lagunitas and Walker Creeks. The average annual maximum tidal swing is about eight feet (2.5 meters).

Tomales Bay is an important ecosystem that supports abundant and diverse habitats for wildlife, aquatic organisms, and plants. These habitats include eelgrass beds, intertidal and mud flats and salt and fresh water marshes. Mariculture and fishing are important economic resources in the area and are dependant upon the health of the bay. Tomasini and Millerton Point are adjacent to a commercial oyster farm, which leases the underwater areas within park boundaries. Since Tomales Bay State Park offers opportunities for clam digging, shellfish collection, swimming and fishing, water quality issues affecting these resources are an important concern.

The Tomales Bay watershed is a part of the Regional Water Quality Control Board (RWQCB) Marin Coastal hydrologic planning basin. Beneficial uses for the Tomales Bay basin include marine habitat, preservation of rare and endangered species, fish migration, water contact water recreation (swimming fishing, diving, and wading); non-contact water recreation (boating, hiking camping, beach combing, bird watching, tide pool and marine study), commercial and sport fishing (halibut, clams, herring, rock crab, and ghost shrimp), shellfish harvesting, fish spawning, and wildlife habitat. Tomales Bay and Millerton Gulch are designated as significant surface waters under the Basin Plan. The *Tomales Bay Watershed Stewardship Plan (2002)* is currently being prepared to protect and enhance these beneficial uses and improve water quality. The stakeholder members of The Tomales Bay Watershed Advisory Council consist of local groups, property owners, businesses, and public agencies including California Department of Parks and Recreation, and regulatory agencies. (See Water Quality section below.)

Groundwater resources are scarce within the Tomales Bay basin. Lands on the east shore of Tomales Bay do not have well developed ground water sources within the Franciscan rocks. On the west side of the bay, some wells and springs are developed within the fractured and weathered granitic rocks. Most water supply for Marin County is provided by surface water runoff stored in reservoirs.

Surface Water

Tomales Bay State Park contains several permanent and ephemeral streams, ponds and impoundments. The total park watershed area is approximately. The sub-watersheds within the Tomales Bay SP properties contain some of these smaller streams. Although Tomales Bay is a large estuary, smaller estuaries found at the outflow of these smaller drainages are an important feature of the park's surface waters, providing dynamic habitat for wildlife and a source of nutrients for the fisheries and mariculture.

The natural hydrology of the drainages in the park have been altered by road construction, agricultural use, and development. On the eastside of the bay, the drainages were altered with construction of a railroad in the 1870's, and have been further altered with the construction of Highway 1. Runoff that originally occurred via sheetflow and smaller channels has been concentrated by highway ditches and culverts, creating larger, unnatural channels. These larger channels have connected waters that were once separate systems. In the Millerton Point Area, a artificial channel has formed an estuary at the confluence with the bay.

The lower reach of Millerton Gulch, the low-lying estuary at Tomasini Point, and the lower reaches of the drainages that enter the bay at Shell Beach and Indian Beach fall within the 100-year floodplain.

<u>Wetlands</u>

Tomales Bay State Park contains several ponds and many springs and seeps. The ponds are both natural and artificial. For example, the Heart's Desire Area has a natural seasonal pond at Indian Beach, and a permanent artificial pond that is a part of an abandoned water delivery system. The Inverness Area has one pond and several springs and seeps in connection with the creek drainages. In the Millerton Tomasini Area, on the east side of Hwy. 1, there is a small seasonal pond, which was an impoundment for watering cattle, and a long seasonal step pool cascade, which feeds the drainage into the estuary at Tomasini Point. Adjacent to park property are other scattered impoundments and ponds that form an important network in conjunction with streams and estuaries for wildlife populations.

<u>Streams</u>

The Heart's Desire Area has four perennial unnamed streams. The headwaters originate along the ridge near Pierce Point Road and drain into the bay at various points including Indian Beach, Heart's Desire Beach, Pebble Beach, Shallow Beach (privately owned), and Shell Beach. These riparian systems have V-shaped channels with granitic bed substrates of various sizes and typically support an alder overstory with an understory of shrubs, rushes, and sedges.

The Inverness Area has a network of unnamed ephemeral and permanent streams. These streams have their headwaters at the top of Inverness Ridge and drain into the bay. The steep terrain, in conjunction with local development, has made portions of these drainages susceptible to flash storm events. Redwood Creek, south of the town of Inverness, sustained a substantial landslide (debris flow) in 1982. State Parks implemented a major creek restoration project to stabilize the system on State Park land.

The Millerton Area has several small drainages and three larger streams. One of these streams, Millerton Creek, is designated in the RWQCB basin plan as a significant "surface water body". State Parks ownership includes a significant portion of this creek from above Highway 1 to the bay outflow, which forms a saltmarsh estuary. Historically, there have been water quality issues for this stream due to elevated *E. coli* bacterial levels. Presumably this is related to upstream land uses including cattle grazing, an open rock quarry and the Borello Sewage Ponds.

Both the Cyprus Grove and Marconi Cove Areas have one stream flowing though them with an outlet at the bay.

Estuaries

Estuaries occur at the outlet of many of the small tributary streams on park property. Most of these systems are tidal saltmarshes including tidal flats. On the east shore these consist largely of pickleweed dominated systems. At Hearts' Desire Beach, the drainages are characterized by brackish marshes that transition into saltmarshes at the bay edges. At Indian Beach and Shell Beach, there are a few areas of riparian forest that grade into freshwater marsh at the outlets. Significant estuaries exist in several locations in the Millerton Area. The largest estuary occurs at the head of Tomasini Point. The nutrient and salinity levels of these estuaries fluctuate with the tidal exchange and nutrient cycling of the Tomales Bay, and are also influenced by the amount of fresh water surface runoff. Estuaries are valuable habitat for fish, rearing habitat for anadromus fish, bird breeding and foraging, and function to improve water quality through filtering and recycling of nutrients and are critical to the food chain plankton base for bivalves including commercial oysters.

Water Supply

Within the park, water for the residence at Millerton Point comes from a well on the east side of Highway 1. Another well located further upslope in a small drainage feeds an impoundment left from cattle grazing prior to purchase by parks.

On the west side there are a number of wells and springs that are developed within the granitic rocks along Inverness Ridge. Park-owned property along the ridge is an important contributor to water recharge for this system.

Water sources for the park residences and Heart's Desire Beach come from a well located near the "boneyard" maintenance area. Water tanks are used to insure adequate supplies. There are several other known springs within the park in the Heart's Desire Area.

Water Quality

As landowners in the Tomales Bay watershed and managers of bay front and tributary waters, the Department of Parks and Recreation is responsible for complying with the regional water quality objectives and TMDLs (Total Maximum Daily Loads) established by the San Francisco RWQCB. Tomales Bay has been listed by the State of California [and on a federal 303(d) list] as an impaired waterbody due to pathogens, nutrient levels, mercury, and sediment. TMDLs are established as part of a Basin Plan to address the causes of pollution and bring the waterbody into compliance levels. TMDLs have already been set for pathogens (2002), with remaining problems to be addressed by 2007.

The causes of the water quality impairments to Tomales Bay are discussed below:

<u>Pathogens</u>
Contributing factors thought to be involved in elevated levels of pathogens are substandard or failing septic systems, agricultural wastes, boating and other recreational uses, urban runoff, and natural populations of wildlife (primarily large numbers of migrating and resident birds).

Possible contributing factors on state park lands, which need further investigation and study, include: 1) the failure of or need for upgrading public restroom facilities septic systems, especially in flood and riparian zones, 2) historic residential septic systems that were not decommissioned properly, 3) current residential leachfields, and 4) the residuals from a dairy in the Millerton Area.

<u>Nutrients</u>
Contributing factors to high nutrient levels include the above septic system problems as well as factors involved in bay nutrient mixing and seasonal rain flows.

<u>Sediment</u>
According to the Preliminary Tomales Bay Watershed Plan, sedimentation is rapidly occurring (infill rate is 5mm/yr) in the bay. Studies show most of the recent sedimentation in the bay occurred between 1930 and 1960. Erosion occurs naturally and as a result of human activities. The main contributors to the rapid sedimentation seen in the bay likely include logging, dam or stock pond creation, poor agricultural practices, land clearing, grading, and road construction. The construction of a railroad through current State Park lands on the east side in the 1870's isolated small coves, causing them to infill and become salt marshes. This is especially evident at Tomasini Point where the old levee can still be seen although it has been breached in several places allowing some flow between stream and the outer salt marsh.

Mercury
No known sources of mercury contamination originate from State Park property or from drainages that pass through State Park property. High mercury levels are a result of an old mine in the Walker Creek drainage. The effects of mercury are widespread within Tomales Bay. Not only is mariculture and commercial and sports fishing effected but studies have shown contamination throughout the food chain in leopard sharks, bat rays, and diving ducks which feed on shellfish and crabs. State Parks does lease portions of the bay for oyster farming.

Water Quality Monitoring

Water quality monitoring is currently being carried out by a number of federal and state agencies. State Parks tests the west shore beach waters and the septic systems in these locations. National Parks has instituted a regular program of water quality monitoring. A bay monitoring program also exists to track the health of the bay by measuring many parameters such as temperature, salinity, suspended sediment, depth, and micro- and macro-invertebrates. These long- term studies have sampling stations located off Millerton and Tomasini Points as well as off the Cyprus Grove Area. In addition, a state mussel watch monitoring station is located in the bay and regular water quality testing is conducted to ensure the health of shellfish for public consumption. The RWQCB has developed a TMDL Pathogen Plan for the bay. Regular monitoring is conducted for compliance with this plan.

Sample stations for the above programs are located in the Millerton Area and along several east shore tributaries including Millerton Gulch. However, many areas remain untested which could contribute to impairment and requires further investigation.

Plant Life

Tomales Bay State Park is located on the eastern side of the Point Reyes peninsula within the San Francisco Bay area floristic sub-region of the central western California floristic region. The floristic composition and diversity within the park is influenced by its proximity to the Pacific Ocean, existing topography, and the presence of the San Andreas fault under Tomales Bay. Seismic activity along the San Andreas fault is responsible for the presence of Tomales Bay and for a raised water table in the vicinity of the Bay. Movement along the fault has resulted in the occurrence of different geologic blocks, and therefore different soil substrates, on either side of Tomales Bay. The steep slopes on the western side of Tomales Bay are dominated by the closed-cone Bishop pine, hardwoods such as California bay, California wax myrtle, and coast live oak, as well as several chaparral species. Conversely, vegetation on the eastern side of the Bay is pre-dominantly annual grassland and coyote brush on coastal terraces.

Plant Communities

Tomales Bay State Park supports 21 plant communities as described in *A Manual of California Vegetation*. A plant communities map for the area including Tomales Bay State

Park has been prepared for the National Park Service and is in the process of being finalized. The aerial photos used to create this map were taken in 1994 prior to the Mount Vision fire. Plant communities were named using the Sawyer & Keeler-Wolf classification system. The polygons labeled as "mapping units" refer to those plant assemblages that were not classified using the Sawyer & Keeler-Wolf system because it was too difficult to determine their composition to species level from the aerial photos. The Sawyer & Keeler-Wolf classification system is cross-walked to the Holland classification system and the California Department of Fish and Game's (CDFG) Wildlife Habitat Relationships (WHR) classification system in ***Table 4***.

Of the 21 plant communities within Tomales Bay State Park, two are listed in the CDFG's California Natural Diversity Database (CNDDB, 2002) as sensitive plant communities. Those communities are coastal terrace prairie and northern coastal salt marsh under the Holland classification system.

<u>Coastal Terrace Prairie</u>

Coastal terrace prairie is described as "a dense, tall grassland (to 1m tall) dominated by both sod and tussock-forming perennial grasses. Most stands are quite patchy and variable in composition…". The distribution of coastal terrace prairie is discontinuous from Santa Cruz County north into Oregon. Soils are sandy loams on marine terraces near the coast at elevations ranging from approximately 700-1000 feet within the coastal fog zone. Characteristic plant species include bentgrass (*Agrostis capillaris* – non-native), vernal grass (*Anthoxanthum odoratum* – non-native), sea pink (*Armeria maritima* var. *californica* – native), Pacific reed grass (*Calamagrostis nutkaensis* – native), California oatgrass (*Danthonia californica* var. *americana* – native), hairgrass (*Deschampsia cespitosa* ssp. *holciformis* – native), alta fescue (*Festuca arundinacea* – non-native), red fescue (*Festuca rubra* – native), and velvet grass (*Holcus lanatus* – non-native).

<u>Northern Coastal Salt Marsh</u>

Northern coastal salt marsh is described as a highly productive plant community composed of salt-tolerant herbaceous and semi-shrubby plant species forming moderate to dense cover up to 1m tall. Most of the species are winter-dormant. This plant community is found along the coast in the sheltered inland margins of bays, lagoons, and estuaries. It occurs at sites that are affected by regular tidal fluctuations for at least a portion of the year. Representative species include dodder (*Cuscuta salina* - native), saltgrass (*Distichlis spicata* - native), spikerush (*Eleocharis parvula* - native), frankenia (*Frankenia salina* – native), gumplant (*Grindelia sp.*), *Jaumea carnosa* - native, rush (*Juncus lesueuri* – native), statice (*Limonium californicum* -native), seaside plantain (*Plantago maritima* - native), cinquefoil (*Potentilla anserina* ssp. *pacifica* - native), pickleweed (*Salicornia virginica* - native), pacific cordgrass (*Spartina foliosa*), and arrow-grass (*Triglochin maritima*). Northern coastal salt marsh occurs along the coast from the Oregon border south to Point Conception.

Dominant plant communities within Tomales Bay State Park are the Bishop pine alliance on the western side of Tomales Bay and the California annual grassland alliance with native component (i.e., coastal terrace prairie) on the eastern side of Tomales Bay.

Sensitive Plant Species

Sensitive plant species are those that occur on the U.S. Fish and Wildlife Service (Federal) list, the California Department of Fish and Game (State) list of special plants (i.e., Rare, Endangered, or Species of Concern), or the California Native Plant Society's (CNPS) list. The CDFG California Natural Diversity Database (CNDDB) was queried for known occurrences, and the CNPS Electronic Inventory of Rare and Endangered Vascular Plants of California was queried for species potentially occurring within the park. In addition, the local chapter CNPS plant lists for the park were reviewed for information on the occurrence of sensitive plant species within Tomales Bay State Park.

There are 15 sensitive plant species that are known to occur within Tomales Bay State Park (Table 2). Six of the 15 plant species are listed as Federal Species of Concern. Plant surveys were completed within the park and a plant list compiled by the Marin Chapter of the California Native Plant Society on April 4, 2000 and March 27, 2001. In addition to the 15 sensitive plant species known to occur in Tomales Bay State Park, another 35 sensitive plant species have the potential to occur there. Suitable habitat exists within park boundaries for all these species.

California Native Plant Society Ranks: List 1A = Presumed extinct in California; List 1B = Rare or Endangered in California and Elsewhere; List 2 = Rare or Endangered in California, more common elsewhere; List 3 = Plants for which we need more information (a review list); List 4 = Plants of limited distribution (a watch list). State ranks: CR = California (State) Rare; CE = California (State) Endangered; SOC = Species of Concern. Federal ranks: FE= Federal Endangered; SOC = Species of Concern.

Exotic Plant Species

Exotic plants are those species that are not part of the local native flora. They are species that are typically adapted to areas that have been disturbed in some way, such as along roads and in grazed areas. They are often fast growing species with a tolerance to a wide range of environmental conditions which facilitate their spread and establishment into new areas. Some exotic plant species are particularly invasive and can cause extensive degradation to natural plant communities.

There are 126 exotic plant species occurring within Tomales Bay State Park, according to the plant lists compiled by the Marin Chapter of CNPS in 2000 and 2001. The California Exotic Pest Plant Council (CalEPPC) list of Exotic Pest Plants of Greatest Ecological Concern in California was referenced for the exotic plant species that are known to occur within the park. The CalEPPC list is divided into 6 categories based upon how widespread the species is and how much of a problem it is for California native ecosystems.

TABLE 4. Plant Community Classifications Crosswalk

SAWYER & KEELER-WOLF	HOLLAND	WHR
Arroyo willow alliance	Central coast arroyo willow riparian forest	Freshwater emergent wetland
Bishop pine alliance	Closed-cone coniferous forest	Closed pine-cypress
Blue blossom alliance	Blue brush chaparral	Mixed chaparral
California annual grassland weedy alliance	Non-native grassland	Annual grassland
California annual grasslands with native component	Non-native grassland	Annual grassland
California bay alliance	California bay forest	Coastal oak woodland
California wax myrtle alliance	none	Coastal oak woodland
Coast live oak alliance	Coast live oak woodland	Coastal oak woodland
Cordgrass alliance	Northern coastal salt marsh	Saline emergent wetland
Coyote brush alliance	Central Lucian coastal scrub	Coastal scrub
Douglas fir alliance	Coast range mixed conifer forest	Douglas-fir
Dunes	Active coastal dunes	Coastal dunes
Eucalyptus spp. Alliance	Eucalyptus	Eucalyptus
Introduced perennial grassland	Coastal terrace prairie	Perennial grassland
Mixed manzanita mapping unit	Chaparral	Mixed chaparral
Pacific reedgrass alliance	Coastal terrace prairie	Perennial grassland
Pickleweed alliance	Northern coastal salt marsh	Saline emergent wetland
Red alder alliance	Red alder riparian forest	Montane riparian
Rush alliance	Freshwater seep	Fresh emergent wetland
Saltgrass alliance	Northern coastal salt marsh	Saline emergent wetland
Willow mapping unit	Willow riparian	Riparian

TABLE 5. Sensitive plant species known to occur within Tomales Bay State Park.

SPECIES	COMMON NAME	LIST STATUS (CNPS/State/Federal)
Arctostaphylos virgata	Marin manzanita	1B/none/none
Campanula californica	swamp harebell	1B/none/SOC
Carex lyngbyei	Lyngbye's sedge	2/none/none
Ceanothus gloriosus var. gloriosus	Point Reyes ceanothus	4/none/none
Ceanothus gloriosus var. porrectus	Mount Vision ceanothus	1B/none/SOC
Cordylanthus maritimus ssp. palustris	Point Reyes bird's-beak	1B/none/SOC
Elymus californicus	California bottlebrush grass	4/none/none
Fritillaria affinis var. tristulis	Marin checker lily	1B/none/none
Fritillaria liliacea	fragrant fritillary	1B/none/SOC
Gilia millefoliata	dark-eyed gilia	1B/none/none
Grindelia hirsutula var. maritima	San Francisco gumplant	1B/none/SOC
Grindelia stricta var. platyphylla	gumweed	4/none/none
Microseris paludosa	marsh microseris	1B/none/none
Polygonum marinense	Marin knotweed	3/none/SOC
Ribes victoris	Victor's gooseberry	4/none/none

Of the 126 exotic plant species in the park, 27 of them are listed by CalEPPC as threats to California wildlands and another 6 were “considered but not listed”. Six of the exotic plant species at Tomales Bay State Park are in CalEPPC’s List A-1 category (i.e., widespread pests that are invasive in more than 3 regions identified in *The Jepson Manual: Higher Plants of California*. One exotic plant species is on List A-2 (i.e., regional pests that are invasive in 3 or fewer regions identified in *The Jepson Manua*l). Twelve exotic plant species are in the List B category (i.e., wildland pest plants of lesser invasiveness or invasive pest plants that spread less rapidly and cause a lesser degree of habitat disruption than List A plants). Five of the exotic plant species are in the “Need More Information” category and three are in the “Annual Grasses” category (i.e., annual grasses that are abundant and widespread in California and pose significant threats to wildlands.

The exotic plant pests within Tomales Bay State Park that are on List A-1 are hottentot fig, scotch broom, cape ivy, blue gum, french broom, and Himalayan blackberry. The List A-2 plant is European pennyroyal. These species in particular should be an important focus of weed eradication or control efforts. In addition to these species, the hybrid cordgrass (*Spartina* spp.) has been recently found in Tomales Bay. This noxious weed is a hybrid between several species of *Spartina*. The offspring of these crosses are reproductively superior to the native and parent species and are highly invasive in marshes and mudflats. Several *Spartina* spp. are on CalEPPC's Red Alert List (i.e., species with potential to spread explosively; infestations currently restricted). If these or hybrid species are found within Tomales Bay State Park, immediate action should be taken to eradicate them. Smooth cordgrass (*Spartina alternifolia*) is on the CalEPPC's List A-2.

Animal Life

The Point Reyes peninsula and the Tomales Bay watershed support a rich mosaic of diverse wildlife habitats. The watershed is reported to have sightings of 470 species of birds and is home to important threatened and endangered species such as northern spotted owl, coho salmon, steelhead trout, California freshwater shrimp, and California red-legged frogs.

Wildlife Habitats

Tomales Bay State Park includes a sampling of this mosaic of natural communities, which supports an abundance of wildlife. The park is home to a high number of special-status species. Wildlife habitats types, as classified by the Wildlife Habitat Relationship System (see WHR map) include: Fresh Water Emergent Wetland (fresh water marsh), Closed Cone Pine-Cypress (Bishop Pine Forest), Annual Grassland, Coastal Oak Woodland, Saline Emergent Wetland (salt marsh), Coastal Scrub, Riverine, Lacustrine, Estuarine, and Marine (which includes sandy beaches, intertidal zones, mud flats and rich eel grass beds).

Sensitive Animal Species

Sensitive animal species are those that are found on the U.S. Fish and Wildlife Service (USFWS) list and the California Department of Fish and Game (CDFG) list of special animals (January 2003, See Table 6). These species are considered *endangered*, *threatened* or a *species of special concern* by the USFWS or CDFG. Several species are also of local concern or on special watch lists due to declining local populations. Potential habitat exists within Tomales Bay State Park for 11 federally threatened or endangered species and 7 state threatened or endangered species, 6 of which are known to be present. In all, there are 80 special status sensitive species, with potential habitat in the park, 55 of which are birds. There have been no individual species inventories conducted by DPR, although the National Park Service and Point Reyes Bird Observatory have conducted surveys and monitoring for several species in limited areas of the park.

<u>Amphibians</u>

The federally threatened and California red-legged frog (*Rana aurora dratonyii*) inhabits wetlands, marshes, ponds and creeks. The frog has been reported in the Heart's Desire area, but probably also inhabits the wetlands and streams in other areas of the park. The foothill yellow-legged frog (*Rana boylii*) is a California species of concern (CSC) that inhabits fresh water streams, but can be found in other wetland locations. The yellow-legged frog has been reported in the Inverness area, but potential habitat exists in all permanent streams within the park.

Birds

The Tomales watershed is an important resting and foraging stop for migrating birds on the Pacific fly-way. It supports a large resident year round and nesting community as well as providing wintering habitat for many birds. There have been reported sightings of 470 bird species, of which 220 are thought to be resident in the watershed, with 55 listed as sensitive species.

Shorebirds

Tomales Bay is a foraging ground for migrating shorebirds and is recognized as a wetland of regional importance by the Hemisphere Shorebird Reserve Network. Sensitive birds include the state threatened black oystercatcher and California black rail, and the long billed curlew, which is a federal and state species of concern (FSC, CSC). There is potential nesting habitat in the estuaries on the eastern shore for the California black rail, which has been seen at Tomasini Point.

Seabirds

Seabirds listed as federal and/or state species of concern or of local concern include the common loon (*Gavia immer*), American white pelican (*Pelecanus erythrorhynchos*) double-crested cormorant (*Phalacrocorax auritus*), canvasback (*Aythya valisineria*), Aleutian Canada goose (*Branta canadensis leucopareia*) (delisted), Barrow's goldeneye (*Bucephala islandica*), Harlequin duck (*Histrionicus histrionicus*), California gull (*Larus califoricus*), Caspian tern (*Sterna caspia*), elegant tern (*Sterna elegans*), and Foster's tern *(Sterna fosteri).* Waterbirds are most abundant on the eastshore and feed in the mudflats and small estuaries. Many also forage in the eel grass beds off Millerton Point and near Cyprus Grove. Others are attracted by the large herring run.

The federally and state endangered Brown pelican *(Pelecanus occidentalis californicus)* does not breed in the area, but is abundant in late summer and are seen May though December. Pelican populations have recovered since the ban of DDT, and they have been considered for possible delisting.

TABLE 6. List of Sensitive Wildlife Species occurring in (or for which potential habitat exists within) Tomales Bay State Park

TYPE	COMMON NAME	SPECIES	STATUS	PROBABILITY IN TBSP
AMPHIBIANS	California red-legged frog	*Rana aurora draytonii*	FT, CSC, CP	Present
	Foothill yellow-legged frog	*Rana boylii*	FSC, CSC, CP	Present
BIRDS	Common loon	**Gavia immer*	FSC, CSC	Present W
	American white pelican	**Pelecanus erythrorhynchos*	CSC	Present M
	Brown pelican	**Pelecanus occidentalis californicus*	FE, SE, CFP	Present M
	Double-crested cormorant	**Phalacrocorax auritus*	CSC	Present R
	Great blue heron	**Ardea herodias*	Local concern	Present R
	American bittern	*Botaurus lentiginosus*	FSC	Possible W
	Snowy ergret	**Egretta thula*	FSC	Present R
	Black-crowned night heron	**Nycticorax nycticorax*	Local concern	Possible R
	White-faced ibis	**Plegadis chili*	FSC, CSC	Possible M
	Canvasback	**Aythya valisineria*	Local Concern	Probable M
	Aleutian Canada goose	*(W)Branta canadensis leucopareia*	FCS (Delisted)	Present W
	Barrow's goldeneye	**Bucephala islandica*	CSC	Present W
	Harlequin duck	**Histrionicus histrionicus*	FSC, CSC	Possible W
	Cooper's hawk	**Accipiter cooperi*	CSC	Present W+
	Sharp-shinned hawk	**Accipiter striatus*	CSC	Present W+
	Golden eagle	**(W)Aquila chrysaetos*	CSC	Present R
	Ferruginous hawk	*(W)Buteo regalis*	FCS, CSC	Possible W
	Northern harrier	**Circus cyaneus*	CSC	Present R+
	White-tailed kite	**Elanus caeruleus*	FSC,CFP	Present R+
	Merlin	*(W)Falco columbarius*	CSC	Possible W
	Prairie falcon	**Falco mexicanus*	CSC	Possible W
	American peregrine falcon	**Falco peregrinus anatum*	SE, FSC	Present W+
	Bald eagle	**(W)Haliaeetus leucocephalus*	SE, FT	Possible V
	Osprey	**Pandion haliaetus*	(FPD),CFP	Present S++
	California black rail	*Laterallus jamaicensis coturniculus*	CSC	Present R
	Black oystercatcher	**Haematopus bachmani*	ST CFP	Present R+

BIRDS (cont'd)	Long-billed curlew California gull Caspian tern Elegant tern Foster's tern Short-erred owl Long-eared owl Burrowing owl Northern spotted Owl Black swift Vaux's swift Rufous hummingbird Allen's hummingbird Lewis' woodpecker Red-breasted sapsucker Olive-sided flycatcher Willow flycatcher Loggerhead shrike California horned lark Purple martin Bank swollow Hermit warbler Yellow warbler Saltmarsh common yellowthroat Yellow-breasted chat Lark sparrow Brewer's sparrow Chipping sparrow Tricolored blackbird	**Numenius americanus* **Larus califoricus* **Sterna caspia* **Sterna elegans* **Sterna fosteri* **Asio flammeus* **Asio otus* **Athene cunicularia* *Strix occidentalis caurina* **Cypseloides niger* **Chaetura vauxi* *Selasphorus rufus* **Selasphorus sasin* **Melanerpes uropygialis* **Sphyrapicus ruber* **Contopus cooperi* **Empidonax trailii* **Lanius ludovicianus* *Eremophila alpestris actica* **Progne subis* **Riperia riperia* **Dendroica occidentalis* **Dendroica petechia brewsteri* *Geothlypis trichas sinuosa* **Icteria virens* **Chondestes grammacus* **Spizella breweri* **Spizella passerina* **Agelaius tricolor*	Local concern FSC,CSC CSC Local concern FSC, CSC Local concern CSC CSC CSC FT FSC,CSC FSC,CSC Local concern FCS FSC FSC FSC SE FSC, CSC CSC CSC ST, FSC FCS CSC FSC, CSC CSC FCS Local concern Local concern	Present R Present W Present S Present S Present R Present W Possible W+ Present M Present R++ Possible M Possible M Possible M Present R+ Possible M ProbableW ProbableS+ Possible M ProbableW+ Probable R+ Possible S+ Possible M Probable + ProbableS+ Present R+ Possible M Possible M+ Possible M ProbableS+ ProbableR++

MAMMALS	Townsend's western big-eared bat	*Corynorhinus townsendii townsendii*	FSC, CSC	Possible
	Pallid bat	*Antrozous pallidus*	CSC	Probable
	Long-eared myotis	*Myotis evotis*	FSC	Probable
	Fringed myotis	*Myotis thysanodes*	FSC	Probable
	Long-legged myotis	*Myotis volans*	FSC,	Possible
	Yuma myotis	*Myotis yumanensis*	FSC	Present
	Western mastiff bat	*Eumops perotis*	FCS, CSC	Possible
	Point Reyes mountain beaver	*Aplodontia rufa phaea*	FSC, CSC	Present
	Salt marsh harvest mouse	*Reithrodontomys raviventris*	FE, SE, CFP	Possible
	Point Reyes jumping mouse	*Zapus trinotatus orarnius*	FCS, CSC	Possible
	American badger	*Taxidea taxus*	Local concern	Present
	Gray whale	*Eschrichtius robustus*	Recovered	Present
REPTILES	Northwestern pond turtle	*Clemmys marmorata marmota*	FSC, CSC	Present
	Olive(=Pacific) Ridley sea turtle	*Lepidochelys olivacea*	FT	Present V
FISHES	Coho salmon	*Onchorynchus kisutch*	FT, SE	Possible
	Steelhead trout	*Onchorynchus mykiss*	FT	Probable
	Tidewater goby	*Eucyclogobius newberryi*	FE (FPD), CSC	Present
	Tomales roach	*Lavinia symmetricus*	CSC	Possible
INVERTEBRATES	Monarch butterfly (Winter roosts)	*Danaus plexippus*	Local concern	Possible
	Myrtles sileverspot	*Speyeria zerene myrtleae*	FE	Possible
	California brackishwater snail	*Tryonia imitator*	Local concern	Possible
	Tomales isopod	*Caecidotea tomalensis*	Local concern	Possible
	California freshwater shrimp	*Syncaris pacifica*	FE, SE	Possible

Nesting Codes: *Indicates CNDDB Special Status Occurrences Tracked for Nesting Population of Birds, (W)= Indicates CNDDB Special Status occurrences tracked for the wintering population of birds, + Indicates birds known to nest in the area, ++ Indicates nesting birds in park.
Seasonality Codes: S= mostly summer, W= mostly winter, M= migrant, spring and/or fall, R= resident year-round, V=vagrant/unusual
Status Codes: FE = Federal Endangered; FT = Federal Threatened; FC = Federal Candidate for listing; FPD = Federal Proposed for Delisting; FSC = Federal Species of Concern; SE = State Endangered; ST = State Threatened; CFP = California Fully Protected; CP = California Protected; CSC = California Species of Concern

Wading birds

Most of the sensitive wading birds are local residents, however the known rookeries are located on outside the park. Wading birds with CSC status or of local concern include great blue heron *(Ardea herodias)*, American bittern *(Botaurus lentiginosus)*, snowy egret *(Egret hula)*, black-crowned night heron *(Nycticorax nycticorax*), and white-faced ibis *(Plegadis chili)*.

Land birds

Land birds use a variety of habitats within the park. Riparian areas are important to winter insect-eating migrants. Grasslands support ground nesting birds and insect and seedeaters. The coniferous and associated mixed oak forests provide essential habitat for owls. Shrub habitats are used by nesting birds and as prime habitat for wintering migrants like the loggerhead shrike (*Lanius ludovicianus*). Marshes with patches of S*cirpus sp.* can be used by the saltmarsh common yellow throat (*Geothlypis trichas sinuosa)* and the tri-colored blackbird (*Agelaius tricolor*).

Sensitive species with potential habitat include black swift (*Cypseloides niger*), Vaux's swift (*Chaetura vauxi*), rufous hummingbird (*Selasphorus rufus*), Allen's hummingbird (*Selasphorus sasin*), Lewis' woodpecker (*Melanerpes uropygialis*), red-breasted sapsucker (*Sphyrapicus rubber*), olive-sided flycatcher (*Contopus cooperi*), willow flycatcher (*Empidonax trailii*), loggerhead shrike (*Lanius ludovicianus*), California horned lark (*Eremophila alpestris actica*), purple martin (*Progne subis*), bank swollow (*Riperia riperia*), hermit warbler (*Dendroica occidentalis*), yellow warbler (*Dendroica petechia brewsteri*), saltmarsh common yellowthroat (*Geothlypis trichas sinuosa*), yellow-breasted chat (*cteria virens*), lark sparrow (*Chondestes grammacus*), Brewer's sparrow (*Spizella breweri)*, chipping sparrow *Spizella passerina*, and tri-colored blackbird (*Agelaius tricolor*).

Raptors

Raptors use grasslands, coniferous forest, tidal flats, marshes and bay waters (for fish). The abundance of raptors depends on the fluctuating populations of rodents and fish and shows a wide variation over the years according to local studies. Tomasini Point is excellent raptor habitat for foraging and for shrub and ground nesting birds.

The northern spotted owl, a federally threatened species, is a known resident of forested habitats in the Inverness and Heart's Desire areas of the park. Northern spotted owls (*Strix occidentalis caurina*) require large trees for breeding and are sensitive to noise disturbance. Other owls that are listed as CSC include short-erred owl (*Asio flammeus)*, long-erred owl, and burrowing owl. These owls have been seen on the eastern shores of the bay and burrowing owls and short-erred owls often winter on Tomasini Point.

The American peregrine falcon (*Haliaeetus leucocephalus*), a state endangered bird and federal species of concern, is present within the park in the winter.

Bald eagles (*Pandion haliaetus)*, which are state threatened, have been reported to be increasing their numbers in Marin County. Tomales Bay is a likely site of repopulation due to favorable habitat and the availability of food.

Other hawks, kites, and falcons which are listed as FSC and CSC include Cooper's hawk (*Accipiter cooperi)*, sharp-shinned hawk (*Accipiter striatus)*, golden eagle (*Aquila chrysaetos*), ferruginous hawk (*Buteo regalis)*, northern harrier (*Circus cyaneus)*, white-tailed kite (*Elanus caeruleus)*, merlin (*Falco columbarius)*, prairie falcon (*Falco mexicanus)*, and osprey (*Pandion haliaetus*). Osprey, northern harriers, and white tailed kites nest within the park.

Mammals

Potential habitat exists for the federally endangered saltmarsh harvest mouse (*Reithrodontomys raviventris*) in the salt marshes of the bay.

The Point Reyes mountain beaver (*Aplodontia rufa phaea)*, is a state and federal species of concern. Excellent potential habitat for this isolated subspecies exists in the Inverness and Heart's Desire areas of the park, especially dense riparian areas of coyote brush, thimbleberry, salmonberry, blackberry, dogwood, salal, bracken ferns, willows, and grasses. One burrow location has been reported in the park. It is likely that other burrows exist, however no surveys have been conducted.

The Point Reyes jumping mouse *(Zapus trinotatus orarnius)* is a federal and state species of concern. This subspecies has a patchy distribution within the area. Suitable habitat includes grassy wet meadows adjacent to coniferous forest, low growing chaparral, marshes, and riparian alder communities. No surveys have been conducted within the park.

The gray whale (*Eschrichtius robustus*) is listed as a recovered species and is a frequent visitor in Tomales Bay during its migrations. Other marine mammals known to frequent the bay are harbor seals and an occasional elephant seal, which feed on herring and other marine species. Marine mammals are protected under provisions of the Marine Mammal Protection Act (MMPA).

Several species of bats are known to inhabit the area. Species known to be present or likely to be present in the park include Townsend's western big-eared bat *(Corynorhinus townsendii townsendii*), pallid bat (*Antrozous pallidus*), long-eared myotis *(Myotis evotis*), fringed myotis (*Myotis thysanodes*), long-legged myotis (*Myotis volans)*, yuma myotis (*Myotis yumanensis*), and western mastiff bat (*Eumops perotis*). All are federal species of concern except the pallid bat, which is a state species of concern. Depending on the species, bats can roost in woodland areas, mines, caves and buildings.

Reptiles

The northwestern pond turtle is a federal and state listed species of special concern that inhabits fresh water ponds and slow moving streams. They prefer ponds with basking sites for thermoregulation. Although aquatic, pond turtles leave the aquatic site to reproduce, to aestivate, and to overwinter. While there is only one reported sighting within the park, all ponds with nearby streams could support them. No surveys have been conducted.

The olive Ridley sea turtle, a federally threatened species, was sighted at Shell Beach area in 2002. This rare occurrence probably results from confusion induced by the ocean warm current changes due to El Niño and La Niña.

Fish

Coho salmon (*Onchorynchus kisutch)* is a federally threatened and state endangered species. Twenty percent of the population of wild coho salmon from Humboldt to Santa Cruz counties spawn in Olema and Lagunitas Creeks. While this species is not known or expected to inhabit the park, there is historic evidence of runs in bay tributary streams, such as Millerton Gulch. The salmon pass through bay waters located off shore of the park during their migration to current spawning grounds Olema and Lagunitas Creeks.

Steelhead trout (*Onchorynchus mykiss)* are a federally threatened species for the Central Coast form Humbolt to Santa Cruz Counties. Like the Coho salmon they spawn in Olema and Lagunitas Creeks and migrate through waters off the park's shore. However, steelhead trout are far more likely to use bay tributary streams and estuaries (such as those found in the park) as sites for rearing juveniles. Estuaries at the entrance to streams with adequate vegetative cover for protection from predators provide such potential rearing habitat.

The tidewater goby (*Eucyclogobius newberryi)* and the Tomales roach (*Lavinia symmetricus*) are California species of concern. Both species are found in Tomales Bay estuaries. The tidewater goby has been found within the park, although no formal surveys have been conducted. The Tomales roach may be present within the park.

Invertebrates

Myrtle's Silverspot butterfly (*Speyeria zerene myrtleae)*, a federally endangered species, uses coast dunes, scrub and grassland habitats and is now known only from a few sites in northern Marin County. While potential habitat exists on the eastshore of the bay, their occurrence there is unlikely. No studies have been conducted to determine if the species is present within the park.

California freshwater shrimp (*Syncaris pacifica)* is a federal and state endangered species found in low-elevation pools and low-gradient streams among exposed live tree roots (e.g., willows and alders) of undercut banks, overhanging woody debris, or overhanging vegetation. Recent surveys have located shrimp in several tributaries to the bay and potential habitat exists in the park in several stream systems.

Tomales asellid or isopod (*Caecidotea tomalensis)* and the California brackish water snail (*Tryonia imitator)* are species of local concern. The Tomales isopod inhabits freshwater ponds and streams using dense mats of marsh pennywort (*Hydrocotyle spp*.) and decaying leaves for a substrate for egg mass attachment. The California brackish water snail is found in estuaries. Little or no information is known about either species within the park.

Intertidal and Marine Life

Tomales Bay is a large estuary system where fresh water and saltwater mix, creating a rich habitat and biodiversity. These habitats, which extend from the shore to the deep sub-tidal zone, include fresh, brackish and salt water mashes, sandy beaches, rocky shores, creek deltas, mud flats, and open waters which fluctuate seasonally in salt content. The bay is thought to support over a thousand invertebrate species. Rich in nutrients, plankton, forminifera and macroinvertebrates, the seaweed and eel grass beds support rearing habitats for juvenile salmon, a commercial herring fishery, bird foraging, bivalves, and marine mammals.

Common intertidal organisms found in the park include algae, seaweeds, moon snails, California horned snails, rock snails, welks, chitons, amphipods (beach hoppers), isopods, sand crabs, bay and ghost shrimp, by-the wind sailors, moon jellyfish, sea cucumbers, limpets, bay mussels, barnacles, and numerous species of crabs.

<u>Tidal Flats and Sandy Beaches</u>

Intertidal mud and sand flats support a diversity of benthic plants and animals. The marsh plants contribute to the organic food source and microbial activity in the associated estuaries and benthic animals (such as worms, snails, clams, and crabs) are an important food source for a variety of animals, fish, birds, and crustaceans.

The intertidal zone also includes fine grain sandy beaches at Heart's Desire Beach, Indian Beach, Pebble Beach, and Shell Beach. These small beaches support foraging birds and clams. Beaches on the eastshore consist of more coarse sands and cobble.

<u>The Open Waters of Tomales Bay</u>

Eel grass (*Zostera marina)* beds from low tide to a depth of 20 feet are located off Millerton Point and Heart's Desire Beach. Eel grass and other intertidal plants like surf grass and sea lettuce are important to birds and marine animals. Attached to the plants are algae, protozoans, bryozoans, and hydroids. Nematodes, polychaetes, rotifers, copepods, sea slugs, clams, anemones, snails, shrimp, squid, starfish, sea urchins, sea hares, juvenile dungeness crabs, and several flat fish species live in in the branches, at the bases, and around the roots of eel grass. Many of these species provide food for waterbirds and surface-feeding ducks. Bat rays also often feed in the eel grass beds and these beds provide winter spawning habitat for Pacific herring. Scoters, bufflehead, scaup, black brant, and goldeneyes feed on the herring roe, and adult herring are eaten by loons, grebes, and cormorants.

Mariculture

The Tomales Bay Oyster Company, which leases off shore lands at Millerton Point and Tomasini Point, grows several non-native Asian bivalves, including the Pacific or Japanese oyster (*Crassostrea gigas*), the Kumomoto (*C. gigas kumomoto*), the Eastern oyster (*C. virninica*), Manila clams (*Tapes semidecussata*), and mussels (*Mytilus edulis and M. galloprovincialis*).

Oyster cultivation provides habitat for many marine species and allows the filtration of bay waters, increasing water clarity and benefiting ecosystems such as the eelgrass beds. However, this habitat also displaces natural habitat and some native species. Other potential negative effects of mariculture include the introductions of non-native species and diseases.

Commercial and Recreational Fisheries

Tomales Bay once supported large coho salmon and steelhead trout fisheries. These are now closed (except for the catch and release of steelhead of Walker Creek). The current primary commercial fishery in Tomales Bay is Pacific herring (*Clupea pallasi*). The modern herring fishery is almost exclusively for the Japanese herring roe market. Smaller commercial fisheries in Tomales Bay include halibut, perch and live-bait. A few commercial fishermen occasionally take perch, anchovies for live-bait and sardines for sport fishing operations in Bodega Bay. The anchovy and sardine fisheries were historically overfished and are no longer the large market fisheries of days past.

Recreational fisheries in the Bay include Dungeness and rock crabs, jacksmelt, perch, sole, striped bass, sturgeon, sharks, and rays. However because of detected mercury levels, consumers are cautioned by health officials not to exceed recommended consumption levels for sport-caught halibut, perch, smelt, sharks, and rays.

There are 40 species of fish found in the bay, including threespine stickleback, steelhead, coho, California roach, prickly sculpin, Pacific staghorn sculpin, starry flounder, bay pipefish, Pacific herring, northern anchovy, surf smelt, hitch, carp, Sacramento sucker, channel catfish, striped bass, golden shiner, bluegill, largemouth bass, black crappie, topsmelt, sole, ling cod, sturgeon, sardines, pipefish, shiner perch, lamprey, stickleback, and yellowfin goby. Rays and skates include: big skate, California skate, black skate, longnose skate, round stingray, Pacific electric ray, thornback, and California bat ray. The sharks include: sixgill shark, sevengill shark, white shark, salmon shark, soupfin shark, grey smoothhound shark, brown smoothhound shark, Pacific angel shark, leopard shark, and spiny dogfish. Perennial streams are inhabited by stickleback, California roach and sculpin, in addition to salmonids.

Clamming, while not as productive as in historic times, is a stil a popular recreational activity. The horseneck (gaper) is still a favorite for clam diggings. Washington clams, the smaller

Pacific littlenecks, and non-natives such as the Japanese littleneck, are also taken. Washington clams were once found in the park in large numbers. It is thought that the population was all but destroyed by storm events in 1982 that deposited large amounts of sediment on beaches where they were once found. Mussels are also harvested by park users. A shell fish advisory is issued every year both in the summer and winter when mussels and oysters should not be eaten due to high fecal coliform bacterial levels or other disease risks from water pollution.

Significant Aesthetic Resource Values and Constraints

Introduction

Aesthetics are commonly defined as human sensory impressions, including sight and sound. Inherent in the founding and development of state parks is the concept of aesthetics. This has been especially true in the establishment of Tomales Bay State Park.

Aesthetic impressions come through the senses of sight, hearing, smell, touch, taste, and a general synthesis of these fundamental senses. Intuition also plays a part. The far-reaching senses of sight and hearing are the primary conduits by which many visitors experience the park. Included in this section are commonly experienced scenic and auditory resources at Tomales Bay State Park. Discussion of the park's aesthetics also includes the experience of *spirit of place*, which was presented in the Introduction section of this plan.

Scenic Resources

Scenic resources can be defined as the general appearance of a place and the features of its views or landscapes. They consist of both biophysical elements (landforms, water, vegetation) and cultural, or manmade, elements. The concepts of "beautiful" or "unsightly" become, in varying degrees, part of an individual's perception of a scene. Most park visitors would agree that certain elements are necessary for a positive visual experience in this kind of park, based primarily on undeveloped natural conditions.

Scenic quality is an important and valuable resource, especially on public lands. Many people have high expectations of scenic quality when visiting state parks. The scenic qualities of the Tomales Bay region are important not only for out-of-town visitors to the park, but to local residents as well. The preservation, protection, and enhancement of visual quality in this area is extremely important on a local, regional, and State level, as indicated in local and regional land use plans (including the Marin Countywide Plan and Local Coastal Plan). Visual quality is a major public issue in this locality.

Scenic resources are a primary aesthetic consideration in defining an overall, unique sense of place for an individual park, as well as for specific areas within the park.. Tomales Bay State Park is recognized for its spectacular natural beauty and panoramic views from many areas of the park, especially at the shoreline of the bay and in areas of higher elevation.

The seven separate parcels that comprise Tomales Bay State Park occur in two very distinct areas that are separated by the waters of Tomales Bay. Those on the west side of Tomales Bay include the Heart's Desire Area and Inverness Area parcels; parcels on the east side of Tomales Bay include the Cypress Grove, Marconi Cove, and Millerton-tomasini Point Areas. These two sides of the bay have distinct characters that are of value to the visitor and are worth preserving and enhancing.

Overview of Scenic Character

The most significant visual resources of Tomales Bay State Park are the many panoramic views available from within the park looking outward to Tomales Bay and its surrounding landscape. The bay itself commands the visual focus of the entire region, and profoundly affects the visual quality and human experience of its surrounding landscape.

There are a wide variety of scenic resources within Tomales Bay State Park and the two distinct landscape types on either side of the bay. The landscape character on the western side of the bay ranges from the shady and cool forests of Bishop pine, California bay, Coast live oak, and California wax myrtle, to the alder dominated riparian corridors along meandering creeks and warm sandy beaches. There are many panoramic views of the bay and its abundant wildlife from the west side, as well as views of the eastern parcels of the park across the bay, adjacent private property, and National Park Service property.

The eastern side of the bay is characterized by coastal terraces of grassland and coyote brush, and by the grass-covered rolling hillsides containing pockets of California bay trees in the moist, shady canyons. The parklands on this side of the bay also offer spectacular panoramic views of Tomales Bay, Inverness Ridge, and the villages of Inverness and Inverness Park on the west side of the bay.

Visual Resources and Scenic Characteristics

<u>Vista Points/Panoramic Views</u>

Scenic vistas from within the park provide expansive views of the park, the surrounding landscapes, and Tomales Bay. Vista points and panoramic views are found primarily along areas of higher elevation and open vegetation along the roads and trails in the park or at the edge of Tomales Bay.

Panoramic views of and across Tomales Bay are available from the beaches and picnic areas in the Heart's Desire Area (including one picnic area at a designated "Vista Point"), the ridgetops in the Inverness Area, and all of the park parcels on the eastern side of the bay.

<u>Special Landscapes</u>

There are a variety of unique and especially significant scenic areas throughout the park, including the Bishop pine forest, estuary/marsh complexes, and beaches.

Ephemeral Conditions

Ephemeral conditions are defined as those that are constantly changing, producing effects that disappear soon after appearing. There are several important climatic and environmental ephemeral conditions that occur regularly at Tomales Bay State Park that can contribute significantly to visual impressions and to the visitor's experience of the park. These include atmospheric, tidal, and seasonal changes.

Atmospheric Phenomena

Tomales Bay State Park is in a marine environment profoundly influenced by the presence of the Pacific Ocean. The ocean extends its influence into the long rift that forms the bay and the bay influences the atmosphere in the park.

One effect of the marine environment is the formation and continual movement of fog over the water, especially in summer. The fog obscires views with a cool, misty quality that also muffles sound and produces a sense of quiet. Under these conditions, one is compelled to pay attention to immediate surroundings, rather than to the vistas and open landscapes seen in clear conditions. The beaches in Tomales Bay State Park are sometimes warm, sunny refuges when the majority of the coastal peninsula is veiled in fog. Often, the steep topography of Inverness Ridge will block coastal fog from moving over the ridgeline to the shores of Tomales Bay. The parcels on the east side of the bay are much less protected than those on the west side, and often experience windy conditions that allow less fog and more opportunities for clear, bright vistas.

On sunny days, the bay creates a bright atmosphere of reflected light that can lend a dazzling effect to views around the bay. And the relative lack of development and nighttime traffic around the bay creates a very dark sky at night, with wonderful opportunities for stargazing and feeling a connection to those living in earlier times.

Tides

Tidal fluctuations are another variable element in this landscape. Daily tidal fluctuations result in significant visual transformations in the landscape, from bay water to large expanses of mudflats. This condition is especially pronounced at Millerton Point and in shallower areas in the southern part of the bay.

Seasonal Changes

Along with a variety of weather conditions, the changing seasons contribute to a transformation of vegetation around the bay in form, texture, and color. The most obvious are the seasonal displays of wildflowers and the changing colors of deciduous vegetation and grasses, especially pronounced in the spring and autumn.

Visual Qualities of Existing Development

Park facility development is concentrated in the Heart's Desire and Millerton Point-Tomasini Point Areas. Developments such as comfort stations, information kiosks, and entrance kiosks, parking lots, roads, trails, picnic areas, campgrounds, and overhead utility lines affect the viewshed. The Marconi Cove parcel was formerly a private campground and remnants of this prior use remain, such as a concrete boat ramp and some structures. There is also an existing oyster farming operation that uses part of the property for water access and equipment storage.

The Park's Distinctive Visual Areas and Viewsheds

In addition to the differences between the environments of the western and eastern shores of the bay, there are three separate areas within the park that have distinctive, well-defined visual characteristics based on landform, vegetation, and development characteristics (including the amount of development, type of use, and facilities).

The Heart's Desire Area

This area is comprised of a variety of scenic features, including pocket beaches, shady picnic areas, wetlands, and a Bishop pine forest with a mix of fragrant California bay, wax myrtle, and coast live oak. The mix of vegetation adds an ever-changing variety of color, form, and texture throughout the seasons.

As the visitor travels into the Heart's Desire Area to the ranger contact station/office, the road curves through the forest, and the visitor realizes a sense of anticipation and arrival at a special place. The road eventually terminates at one of two parking area near Heart's Desire Beach, where one can see across the bay as well as experience the intimate setting of the beach's natural resources. A trail heads north through the forest and leads to Indian Beach, a wide strand with an estuary and panoramic views of the bay and the landscape of the eastern shore and hillsides.

Another trail from Heart's Desire Beach leads south to a picnic area and vista point on a bluff overlooking the bay, affording beautiful views of the beach and opposite shore. The picnic area itself is heavily used and does not have high visual quality, although the views from this location do. Following the trail further through the pine forest the visitor will approach Pebble Beach and then Shell Beach, also small and intimate in scale, but with opportunities to view the bay and the landscapes beyond.

Manmade elements seen in the Heart's Desire Area include the entrance road and gate, utility poles and lines, informational and directional signs, the ranger contact station/office, an informational kiosk, parking lots, fencing, trash and recycling receptacles, picnic tables, and comfort stations. Staff residences, maintenance facilities, and a maintenance storage yard are also in this area, but are hidden from the visitor's view.

The Inverness Area

This area is comprised of very steep topography covered predominately with forest. A few small drainages flow down the steep hillsides to Tomales Bay. Lush riparian vegetation is associated with these small streams. There are no visitor facilities in this area. Views from the top of Inverness Ridge are spectacular with a panorama of almost the entire 12-mile length of Tomales Bay.

The East Side Parcels

The east side parcels include the Millerton Point/Millerton uplands/Tomasini Point Area, Marconi Cove, and Cypress Grove. These areas are characterized by expansive views of Tomales Bay. Coastal grasslands and scrub vegetation dominate these east side properties, with pockets of California bay in the shady hillside drainages. Low lying areas support estuaries and the tidal influence provides acres of mudflats at low tides. The dominant colors in this landscape change dramatically with the seasons. Winter rains initiate the bright green of newly sprouted grasses and an array of springtime wildflowers. The golden hills of dry grasses characterize the summer and autumn seasons. In all seasons, the frequent breezes blowing through the grasses add a sense of movement to the landscape.

Manmade elements in this area include Highway 1, roadside pullouts, parking lots, day use facilities, picnic tables informational/interpretive kiosks, split rail fencing, trails, and an employee residence. Most of these elements complement the scenic quality by harmonizing with the natural environment primarily through the use of natural/native building materials, siting structures and other facilities unobtrusively, and the use of dark brown colors to blend with the existing landscape.

The Marconi Cove parcel contains structures and a damaged concrete boat ramp from former camping uses by a previous owner. In addition, there is currently an oyster farming enterprise utilizing the site for bay access and storage.

All of the parcels on the east side of the bay offer panoramic views of the bay, the surrounding hillsides, the west side of the bay (including the west side park parcels), and Inverness Ridge.

Designated Scenic Areas or Routes

Highway 1, traversing north-south along the east side of Tomales Bay, is on a statewide list of eligible routes to be designated as a scenic route.

Views from Area Roadways and Adjacent Properties

The primary views of the park parcels can be seen from Highway 1on the east side of Tomales Bay, and Sir Francis Drake Boulevard and Pierce Point Road on the west side of the bay. Local residents and tourists travelling by private vehicle and bicycle see these views.

Views of the park (both east and west parcels) are also clearly visible from boat users on the bay.

Highway 1and Sir Francis Drake Blvd. provide exceptional views of the surrounding landscape. These views offer spectacular images of grass-covered rolling hills to the east, Inverness Ridge, forests, and pocket beaches to the west, and the blue waters of Tomales Bay. Sir Francis Drake Blvd. passes through the small villages of Inverness and Inverness Park before connecting to Pierce Point Road, the road that leads to the main park entrance of the Heart's Desire Area. Sir Francis Drake Blvd. provides expansive vistas of the east side park properties across the waters of Tomales Bay. As Highway 1 winds along the east side of the bay, the viewer has a clear and unobstructed view of the west side parcels across the bay. Often these views also include east side parcels (Marconi Cove, Millerton Point, Tomasini Point, Cypress Grove) in the foreground.

Auditory Resources

The park is located within a region of sparse human settlement, which creates a relatively quiet atmosphere in most areas of the park. There is a predominance of natural sounds within the park, including sounds of wildlife (primarily birds), wind in the vegetation, creeks flowing to the bay, and waves lapping the shoreline. When conditions are right, visitors can hear the faint roar of breakers on the Pacific Ocean side of Inverness Ridge or those outside the entrance to Tomales Bay.

There are sounds that may be considered negative that periodically come into the park from the surrounding landscape: traffic noise from Highway 1 and local roads; motorboats on the bay; motorcycle groups on Highway 1; and sounds from cattle grazing on nearby hills. Hikers on the uplands and ridges surrounding the bay can sometimes hear these sounds from across the bay, especially when the bay waters are quiet and reflect and amplify sounds from the opposite shore.

Significant Cultural Resource Values and Constraints

The Northern Service Center Archaeologist, Ray Benson, completed a cursory cultural resources inventory of the Tomales Bay State Park property boundary. This inventory involved field survey, a review of cultural resource records, historical and archival research, and preparation of report findings.

Types of Cultural Resources

These categories depict four types of cultural sensitivity

1. Prehistoric
2. Ethnohistoric/Ethnographic
3. Historic (Anglo and multi-ethnic)
4. Traditional Cultural Properties

- Culturally sensitive areas, which, based on the background research conducted for this study, have the potential to contain prehistoric or historical cultural resources.
- Recorded cultural resources, some of which have been overbounded to preserve the confidentiality of their locations. The legal authority to restrict cultural resources information is in California Government Code 6254.1 and the National Historic Preservation Act of 1966, Section 304.
- Non-recorded cultural resources. These features do not necessarily meet the criteria of the California or National Registers of Historic Places, but may have cultural and social values for local residents or need further study if they will be impacted by park activities or development.

Archaeological Resources

Archaeological resources within the current Tomales Bay State Park boundaries include prehistoric occupation and activity sites as well as historic occupation areas. It is likely, however, that yet-undiscovered objects, features, or sites may correlate with ethnographic villages, documented historic accounts of early European contact with Native American peoples, and post-contact Mission influence and acculturation of the remaining Native Americans who lived and continued a subsistence life in and around Tomales Bay.

Archaeological deposits known within the current boundary of Tomales Bay State Park are primarily shell midden sites, however, villages have been identified relating to the late prehistoric period. Archaeological remains from habitation or resource processing sites may hold diagnostic artifacts that can be correlated to past occupational times including the period from initial European contact through the time of mission influence and into the period of white settlement.

One archaeological site, CA-MRN-253, located within Tomales Bay State Park near Indian Beach was tested by DPR archaeologists. Preliminary analysis of the recovered cultural materials including carbon 14 dating suggest a Phase 2 occupation. This correlates with a occupation of around 1500 A.D. Non-Indian materials were recovered from the surface of this site. At this time it is not known if these materials reflect contact period occupation or later historic non-Indian occupation. On the east-side of Tomales Bay adjacent to Millerton Creek is CA-MRN-203. This site is interpreted as being a habitation site tentatively dated to the turn-of-the century.

Natural and cultural deterioration to known archaeological resources has occurred within the State Park boundary. The worst damage to archeological resources occurred at Heart's Desire Beach when the restroom was sited in 1956 on part of the midden and the outlet of the estuary was channelized through the midden site in the early 1960s when the parking lot was built. High tides and wind-driven water have also eroded this midden. Development, particularly if it involves earth-moving activities, could threaten cultural resources and as-yet-unknown archaeological sites and historic features within the park boundary. Cultural resources exposed as a result of development could be threatened by site erosion and vandalism or artifact collecting.

Contact Period Archaeology

Beginning in 1539 and lasting nearly 250 years, Spanish, British, and Russian explorers traveled California and made landfall for brief periods. The north San Francisco Bay area was first explored by sea explorers at the Point Reyes Peninsula including the landing of Sir Francis Drake which has been the subject of much archeological investigation – known as the "Drake quest". Nearly 75 Marin County archaeological sites have been investigated searching for evidence of the presence of Drake's party, including contact with the Coast Miwoks with whom Sir Francis Drake spent five weeks in the summer of 1579.

One of the most famous sites is the Estero site (CA-MRn-232) and smaller CA-MRn-307. Artifacts from CA-MRn-307 included Ming Dynasty porcelain that likely originated from the 1595 shipwreck of Cermeno's *San Agustin*. In 1957, Neasham of California Department of Parks and Recreation found sixteenth-century objects in the Murphy Site (CA-MRn-308). By 1960 Treganza had excavated both MRn-308 and MRn-298W and reported historic non-Indian artifacts such as iron spikes, wax, and seven sherds of Ming porcelain.

Cultural Resources Overview

Human presence in the north San Francisco Bay and coastal areas began at least 8,500 years ago based upon evidence at a paleoestuarine environment associated with a shell midden. Fossil Pollen and geological evidence indicates that the local climatic and environmental conditions changed over time. The San Francisco Bay occupies a late Pliocene trough that was flooded repeatedly during Pleistocene interglacial periods. Between 7,000 and 4,000 years ago post-Pleistocene glacial melt and subsequent sea-level rise began to flood the valley which was subsequently to become San Francisco Bay. The archaeological record from CA-MRN-17 at De Silva Island represents both cultural and environmental changes over a span of 3000 years of the bay estuarine ecosystem. These changes would have had a direct effect on the subsistence practices, lifeways, and resulting archaeological record of the region's prehistoric native peoples, including the people living around Tomales Bay.

Sometime after 4000 BP, bayshore- and marsh-adapted people representing a new and distinctive pattern settled at various bay shore settlements. Based on a geographic distribution of Berkeley Pattern components, at CA-MRN-17 and CA-MRN-152, it would appear that Utian populations expanded or radiated westward to San Francisco Bay from earlier settlements of the East Bay around 4000 BP. Utian populations are identified as ancestral Costanoans.

The nearby coast (Mrn-266 and Son-299) probably came into Miwok possession between ca. 3000 and 2500 BP. This north Bay radiation of Utians presemably involved Miwok replacement of Yukian (and Hokan?) populations, just as the Costanoans had supplanted Hokan peoples farther south.

A regional stabilization of climatic and environmental conditions occurred around 3,000 BP. Water levels created large salt marshes, which provided habitat for waterfowl and shellfish. These marsh animals became key protein sources for native Californians. Native groups settled around the bayshore at places with close proximity to marsh resources with sources of fresh water.

Bayshore resources were diverse and widespread and data from the archaeological deposits indicate that populations of hunter-gatherers were sparse but wide ranging. Habitation sites were strategically located on bay and ocean shores as well as in higher points of land. Although the resource base was varied, large projectile points and millingstones suggest both hunting and vegetal processing activity.

With regard to the adaptive success of Utian peoples, it is important to note that virtually all the early Berkeley Pattern settlements were located near coastal or bayshore marshlands. These remarkably productive ecosystems supported large populations of fish, shellfish, waterfowl, shore birds, mammals, and marsh plants and thus were able to sustain large aboriginal populations.

Two of California's prominent archaeologists established a cultural sequence for western Marin County. Based upon archaeological evidence primarily from the Pt. Reyes Peninsula, the three *facies* or patterns include; 1) McClure, representing the "Middle Horizon" in the Coastal Province; 2) Mendoza, and 3) Estero, respectively the counterparts of Phase 1 and Phase 2, "Late Horizon", in the Marin Province.

Beginning ca. A.D.300 to 500, the Berkeley Pattern gradually developed into the Augustine Pattern. The Augustine Pattern incorporates those phases previously assigned to the "Late Horizon," namely, the Mendoza and Estero facies in western Marin County. This was the emerging cultural pattern encountered by the Spanish explorers and missionaries when they arrived in the region.

Ethnographic Overview

The Coast Miwok, who lived in southern Sonoma County and all of Marin County probably numbered around 3000 individuals. Early ethnographic research identifies two dialectic groups: Western, or Bodega, and Southern, or Marin, with the Southern group further divided into valley and coast subgroups. The traditional ethnogeographic territory of the Coast Miwok lies in an area roughly bounded by present-day Duncan's Point, Cotati and Glen Ellen on the north, the Golden Gate of the San Francisco Bay on the south, San Pablo Bay and Sonoma on the east, and the Pacific Ocean on the west. The Miwok of west Marin County have been referred to as Marin Miwok, Marshall Indians, Tomales or Tomales Bay, and Hookooeko.

Prior to the European contact period, numerous Miwok villages were located on nearly every fresh water stream that entered the Bay. Major villages identified by early anthropologists included: 'Sakleki' behind Sand Point near the old Smith's Landing, 'Echa-kolum' at the place later known as Fisherman (Marconi). "a village of considerable size was located at Tom's

Point on the east shore of Tomales Bay. The Indian name for this rancheria was 'shotomko-wi' Kalupi'-tamal is located at Tomales Point at the extreme northwest end of the Tomales peninsula.

Early ethnographers at the turn-of-the century interpreted the sociopolitical organization of the Coast Miwok. They had no tribal organization. A large village had a chief and the appointment of succeeding leaders was not hereditary. A "moiety-type" organization is presumed. Food source locations including fish and shellfish gathering sites were either publicly used, privately owned. For example certain fishing spots were owned by private individuals and used by family members on request. Others could utilize the location on payment.

The area's mild climate, sheltering forests, and abundant natural food sources must have made it a good home for the Coast Miwok. For thousands of years before the arrival of Europeans, they fished, hunted, and gathered wild foods, harvesting salmon and steelhead from creeks and streams, shellfish from Tomales Bay, and abalone from the Pacific Ocean.

Subsistence practices were based upon hunting, fishing, and gathering technologies following a seasonal annual round. Some terrestrial and marine animals such as deer and crab were available throughout the year. Surf fish were caught in circular dip nets. Collecting, storing, and processing of acorns provided a staple food source for winter and early spring when other food sources were unavailable. Anadromous fish species were caught using various methods with or without the use of balsa canoes made of bundled tule reeds. Shellfish foods included mussels and several kinds of clams.

Tom Smith, A Bodega Miwok told anthropologist Isabel Kelly how long-necked clams were gathered in the old days:

> Dug at low tide on flats. Used the digging stick (*Keok*); or a special stick, somewhat sharp, used for this one clam [this kind of stick was called *kukule*]. Stick thrust in to locate shells, and then one follows with the fingers. This clam found deeper than elbow depth. Gathered by both men and women. Collected in conical burden basket. This is the long-necked clam.

Because marine foods were important, settlement locations were adjacent to local food sources such as shorelines, bays, and lagoons. Habitation structures are reported to have been conical and grass-covered, built on a frame of two forked, interlocking poles of willow or driftwood. A dwelling would accommodate 6 to 10 persons. Large villages had a sizable circular sweathouse, dug four or five feet into the ground.

The group's material culture consisted of scant clothing, blankets, clamshell disk beads used as ornaments and currency, ceremonial instruments, ritual objects such as fishing and hunting charms, natural fiber ropes, storage baskets, and various stone, wood, and bone tools.

Ethnohistoric Period

It is popularly accepted the Sir Francis Drake was one of the first Europeans to see the Marin coast. Portuguese trader Sebastian Rodriguez Cermeno who was seeking refuge from heavy winds, anchored at Drakes Bay on November 6, 1595 in his galleon, the *San Agustin*. He was enroute home from the Philippines. Cermeño took possession of the land and port in the name of the King of Spain.

In 1602 Spaniard Don Sebastian Viscaino, dispatched by the Viceroy of Mexico, took steps to possess and colonize the region. After naming Monterey Bay, he continued sailing north, in search of the Cabo de Mendocino, anchoring his flagship the *Capitana* in Drakes Bay on January 6, 1603, the day of the Three Holy Kings. He was seeking remains of the *San Agustin* and her cargo which had shipwrecked when Cermeno was visiting in 1595. He named the bay Puerto De Los Reyes and the cape Punta De Los Reyes (Point Reyes) in honor of the three Kings of Cologne. The cape still goes by the name Vizcaino gave it, but not the bay: that honor goes to Drake-- the European explorer most believe was the first to make landing there.

On October 3, 1775, Bodega y Quadra sailed into Tomales Bay, crossing the bar at the entrance and anchoring close to the eastern side of Tomales Point, opposite Sand Point. He described the greeting given him by the Indians:

> There were innumerable Indians, who crossed in reed floats *(Canoas de Tule)* from one side to the other to reach a hill near our anchorage. After a large number had gathered, they began to shout and continued for two hours without stopping. At the end of this time two of them came alongside the ship and with perfect frankness presented us with plumes, bone necklaces, a basket of seeds that tasted like hazelnuts *(Plumages, Collares de Gueso, un Sesta de semilla con el gusto de Avelana),* and various other trifles of this kind. I recompensed their offerings with handkerchiefs, mirrors, and glass beads, and they departed very pleased.

This account documents the first known contact between Spaniard and Native Americans at Tomales Bay.

Exploration of the North Bay by Europeans continued in the late 18th Century when Spanish explorers and Franciscan missionaries traveled and encountered local Native American peoples. In 1793 Felipe de Goycoechea was delegated to explore the mainland from the Puerto de San Francisco to that of Bodega. His party of 10 soldiers and a sergeant passed through Olema Valley, just south of Tomales Bay. Goycoechea continued toward Tomales Bay and throughout his journey he wrote about the individuals and groups he met including numerous settlements along the northwest shore of Tomales Bay. Mission San Rafael was established in 1817 and documents record nearly 100 baptisms of Indians (Miwoks) from "las Tamales" in 1819.

During the mission period, Mission San Rafael Arcangel and the other missions of the bay area involved local Native Americans, including Coast Miwok, in the many labor tasks of running an agricultural-based mission economy. After the pission period, local Native Americans continued in servitude to Mexican land grant owners. Acculturation and displacement continued throughout the mid-19th century. The Marshall, Bodega, and Sebastopol peoples were earning their livelihoods through farm labor or fishing within their traditional homelands.

Agriculture

Since the first Europeans began ranching in Marin County in the mid-19th century, the county's economy has been tied to livestock agriculture. The era of the Mexican Ranchos saw Marin County divided up among relatively few men with the influences and the grant names still evident in present day town names. Town names such as Bolinas, Corte Madera, Nicasio, Novato, and Tomales.

The east shore parcels of the park lie on land that was once part of the large Nicasio land grant, originally granted to Don Pablo de la Guerra and Don Juan Cooper, by Governor Pio Pico on August 30, 1845. The Hearts Desire and Inverness areas of the park were once part of the Punta de los Reyes grant, a 22,525 acre area granted to the American James Berry in 1851.

Agriculture has thrived in the western part of Marin County since the mid-19th century when the Californios, the first Mexican land grantees, settled here. Point Reyes became known as the birthplace of the California dairy industry, and during the Gold Rush it was famous for another kind of gold: butter! The butter was produced here and shipped by train or schooner to cities and towns throughout the west. Soon, immigrants from Ireland, Switzerland, Portugal, Italy, and other countries established family farms that are still a vital part of the local economy, both on the Point Reyes peninsula and along the eastern shore of Tomales Bay.

Today, agriculture is still the largest private land use in the county and the rangeland where Marin cattle graze is considered to be some of the best in California. In 2001, dairy and beef cattle provided animal and pasture products valued at about $40 million. Other crops, including field and nursery crops, aquaculture, and organic fruit and vegetable crops contributed an additional ten million dollars to the value of the year's agricultural products.

Historically, the coastal towns of Bolinas and Tomales were shipping ports for agricultural products. Tons of potatoes, clams, grains, and dairy products traveled from Marin warehouses to markets in San Francisco. Hay for horses and livestock made the journey in flat-bottomed schooners. Today, the hay crop remains a significant part of Marin's agricultural harvest.

Aquaculture, the cultivation of seafood, began in the United States in the last century with oyster and trout farming. It is now the fastest-growing sector of U.S. mainstream agriculture. Some half dozen West Marin companies annually produce about 20 percent of California's commercial oyster crop, despite continued problems with juvenile seed mortality and harvest closures of Tomales Bay during heavy storms.

Tomales Bay Oyster Company evolved from a San Francisco Bay company founded in 1909. The company moved from there because of water pollution and set up business in West Marin where railroads transported the harvest to market. Today the company produces about a quarter million oysters each year, growing their crop of Pacific oysters from 3/4-inch seed to market size.

Farms and ranches in Marin County produce milk, beef, lamb, wool, feed crops, eggs, poultry, fruits, vegetables, and shellfish. In 2001, fruits, nuts, and vegetables were harvested here with an economic value of almost $841,000. Most of that acreage was devoted to organic commodities including everything from beans and berries to tomatoes and watercress.

Railroads

The North Pacific Coast Railroad, running from Cazadero to Sausalito, was the southernmost extension of the San Francisco and North Pacific Railway which extended from Eureka to Sausalito. The railroad started at the ferry docks in Sausalito; reached Tomales Bay in 1874, and tow years later it ran all the way to the Russian River. Redwood lumber was brought down from the Russian River mills to San Francisco.

City folks soon realized however the redwoods as a vacation destination. The railroad became a major link for the folks from Marin, Sonoma, and San Francisco counties.

In 1902, the North Pacific Coast was renamed the North Shore Railroad. Devastating fires in the early twentieth century and the introduction of the automobile led to the demise of the railroad through to Tomales Bay. Tracks were pulled up in 1930.

Park Purchase

Up until the early 1940s much of the land around Tomales Bay was agricultural or natural. In the 1940s, portions of this land were purchased by private individuals and a few summer homes and beach houses were built. Some of the beaches that the local people had long enjoyed as their own, were also purchased by private individuals. Those who traditionally enjoyed these areas realized that unless action was taken, all the beaches would be closed to public use. A small group of concerned citizens formed the Tomales Bay Beaches Committee for the purpose of securing land for a county or state park. The Marin Conservation League happily took on this project as their own. The Sierra Club, Alpine Club, Tamalpais Conservation League, Marin Nature Group, garden clubs and other civic organizations aided in the crusade to save the beaches. The first step was taken in 1945 when the 185 acre Shell Beach area was purchased by funds raised by the Marin Conservation League and matched by the county to create a county park. The second step was taken when $150,000 was paid to private owners for 840 additional acres bordering the beaches and including a major forest area. Organizations and individuals had raised $26,000, as required by the State Park Commission which had made $124,000 in matching funds available for the creation of the State Park. The Marin County Board of Supervisors provided the balance, plus deeds, to Shell and Stinson Beaches totaling approximately 200 acres. Later the Willis Lynn Jepson

Memorial Grove of Bishop Pines was acquired through funds from the Marin Conservation League donations and was dedicated to the memory of Willis Lynn Jepson, botany professor at the University of California, who worked unceasingly on behalf of conservation and was a frequent visitor to the area. The dedication was made on November 8, 1952. Speakers were Joseph B. Knowland, Newton B. Drury, Charles Kasch of the State Park Commission, and Emanuel Fritz, professor of Forestry at the University of California at Berkeley, a close friend of the late Professor Jepson and Mrs. Norman Livermore, head of the Marin Conservation League. Finally, on November 8, 1952, Tomales Bay State Park, comprising over a thousand acres, was formally dedicated and opened to the public.

The establishment of this park brought to a successful conclusion the long work of a dedicated group of people who were determined to keep this land open for future generations to enjoy. As with many state parks, Tomales Bay State Park continued to expand through the years. In 1997, 13.9 acres alongside Millerton Point were added to the overall holdings. The original Millerton property was owned by the DeGottardi family. Innocente DeGottardi immigrated to the United States from Lucarno, Switzerland at the age of 14. He worked on ranches in the Tomales Bay area until he married and began leasing the Millerton Point Ranch property in 1920, which at this time was owned by Mrs. Miller and Mrs. Joseph Kirk. The ranch property consisted of several hundred acres of bay front and inland grazing land. Innocente DeGottardi later purchased 800 acres from the Kirk heirs. The acres extended along Tomales Bay to the north with a major portion situated on the inland hills, across from present day Highway 1. The DeGottardi's also began to lease easements and property along Tomales Bay on the south side of Millerton Point.

Historic Features of the Park

Though the Point Reyes landscape has not greatly changed since Cabrillo anchored in the bay in 1542, most historic and recreation sites in the park are greatly altered.

Heart's Desire Beach – Park development was underway by the fall of 1953, soon after appropriations became available. Improvements included a scenic entrance road, a water system, a combination comfort station-dressing room at Hearts Desire Beach, a parking area, and a ranger's residence. A comfort station was also built at the upper picnic area some time after the Hearts Desire comfort station was built.

The Hearts Desire Beach restroom is of a design that was standard in the 1950s post-war era. The architect of this building, Bob Uhte, was renowned for his use of concrete block as a building medium., but this structure is be no means unique within the state park system. The comfort station was, regrettably, built on top of a midden. The comfort station was built in 1957 but has been modified so as to have no design integrity.

Shell Beach – There were two pit toilets on the hill between Shell Beach I and Shell Beach II that were used between the early 1950's to the late 1980's. They were taken out and the pits filled in when the two Shasta vault toilets were installed at the present locations at Shell Beach I and at Shell Beach II.

Indian Beach – Connected to Heart's Desire beach by way of a self-guided nature trail, with the nature trail display case and 13 mounted plates installed in the summer of 1987. Indian beach contains no above ground historic resources. The bridge which spans the estuary's inlet was installed in 1987-1988.

Pebble Beach – There was a pit toilet built in the late 50's located near the marsh area. It was taken out and replaced in June 1988 with a Shasta vault toilet on the hillside North of the beach and away from the wetlands.

The park office at the entrance area to Tomales Bay State Park is the only building in Tomales Bay State Park to retain its design integrity. The Park Office was built in 1959, per the DPR facilities list. The structure is wood frame and measures roughly 23'x 25'.

Cypress Grove Area - Per Carlos Porrata, State Park Ranger, North Bay District, "We picked up those 60 acres in the 1980s and it is separated from the Cypress Grove preserve (which belongs to Audubon Canyon Ranch) by a clearly marked barbed wire fence. The North end of the property had an entrance that vehicles were using to illegally camp and it was closed with three or four wooden posts to eliminate the problem. There are no structures on that property." Additional field surveys will be necessary in order to assess significance.

Tomasini Point – In fiscal year 1984-85 State Parks requested permission to demolish a one room structure that it stated was less than 30 years old and had no historical or architectural significance. Archaeologist Jim Woodward evaluated the structure and site in April of 1985. It was stated at the time that the reason for demolition was that "All structures [are] incompatible with projected use of site. Area is to be returned to natural state." At Tomasini where the farm-related features remain, there are remnants of an old corral and old piers in the bay next to the old farm site. Additional field surveys will be necessary in order to assess significance.

Millerton Point – At Millerton point there used to be six houses located along the coast but they were demolished by the Park in the 1970s. There was also a dairy barn and a few outbuildings which were also demolished between 1968 and 1980. At the present time there is a modern structure at Millerton Point that serves as a residence for a park employee. Past vandalism at Millerton resulted in having a 'camp host' site situated here. This is the only employee residence located on the eastern side of Tomales Bay State Park. Additional field surveys will be necessary in order to assess significance.

Marconi Cove – State Lands Commission claims ownership from the water's edge to 75 feet inland due to the fact that that part of this area was created from fill. There used to be a private campground located here and there remains a building that served as a bathhouse on the site. The history on the gas station needs to be checked.

North Dream Farm Road Property– The Dream Farm house and outbuilding have potential as historic resources despite the fact they have been slated for demolition. This property needs further research and survey work.

PLANNING INFLUENCES AND ISSUES

System-wide Planning Influences

Planning for State Parks must be wide-ranging to consider issues that cross regional, local community, and park boundaries. Federal, state, county, and community agencies are responsible for providing oversight and review of various planning-related laws and policies, such as the California Environmental Quality Act (CEQA), the Americans with Disabilities Act (ADA), as well as Regional Water Quality Control Board and Air Quality Management District regulations.

Additionally, numerous California State Park Resource Management Directives guide the planning process.

Regional Demographics and Population Trends

Population Growth

The population of Marin County has increased approximately 10 percent from 1985 to 2000. Between 2000 and 2020, the population is expected to grow 11.4 percent, from 247,289 (the current population) to 275,500. The population of the nine Bay Area counties (Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma) is expected to grow by one million over the next 20 years. Marin County is projected to assume less than three percent of the estimated total growth in the Bay Area. This population growth rate is lower than any of the other Bay Area counties except San Francisco.

Marin County's land-use regulations, which focus development within existing communities, is one factor limiting growth. Another factor limiting Marin County's demographic growth is the county's aging population. Both the median age and percentage of people over the age of 65 have continued to increase over the last 20 years. In 1980, the median age of Marin County was 33.6 years. By 1990, the median age increased to 38.0 years and then to 41.3 years in 2000. The percentage of senior citizens (age 65 and older) has increased from 9.7 percent of the population in 1980 to 13.7 percent by 2000. The Association of Bay Area Governments (ABAG) has estimated a doubling of the proportion of the region's population of people 65 years old and over in the next 20 years. Since 1990 there has been a 62 percent increase in the portion of Marin County's population 85 years and older.

As the population ages, the percentage of children and young adults in Marin County is decreasing. In 1980 the population of children was 24.0 percent, decreasing to 20.1 percent in 1990, with a slight increase to 22.7 percent in 2000. The young adult population also decreased from 18.0 percent in 1980, down to 12.7 percent in 2000. The proportion of adult population (ages 30-64) increased from 48.4 percent in 1980 to 53.2 percent in 1990, and then decreased to 50.9 percent in 2000.

According to the last census, the population of West Marin is 10,913. The population is generally stable or slightly decreasing on the coast and increasing in towns to the east (Pt. Reyes Light, 8/16/2001). The median age of the West Marin region is 44.2, slightly higher than the countywide median age of 41.3.

Racial Diversity

The Bay Area is an ethnically diverse region that is expected to continue to diversify. ABAG estimates that in the next 20 years the proportion of the Bay Area population that is white will decrease from 61 percent to 47 percent, while the Hispanic population will grow from 16 percent to 24 percent, the population of Asian and Pacific Islanders will increase from 16 percent to 20 percent, and the African American population will remain at approximately 9 percent.

The ethnic diversity of Marin County is much lower than the Bay Area region. Diversity in the county is increasing, although it is projected to diversify at a much slower rate than the in the Bay Area or California. In 1990, 88.7 percent of the total population of Marin County was white, decreasing to 84 percent in 2000. People of Hispanic origin comprised 7.8 percent of the population in 1990, increasing to 11.1 percent in 2000. Increases in diversity were also seen in the Asian or Pacific Islander population (4.7 percent in 2000) and African American population (2.9 percent). Other races comprised 4.9 percent of the total Marin County population in 2000 (U.S. Census Bureau).

The West Marin region is even less diverse than the countywide population, with a current population of greater than 90 percent white, and approximately 10 percent Hispanic.

West Marin Land Uses and Regulatory Influences

West Marin Planning and Open Space Organizations

Almost half of Marin County's 388,352 acres is in parkland, open space, or watershed lands, comprising the largest amount of protected open space in the nine-county San Francisco Bay Area. A large proportion of this land is located in the western portion of the county, surrounding Tomales Bay State Park and beyond.

The following is a list of national, state, and regional planning and open space organizations whose sphere of influence would include areas surrounding Tomales Bay State Park.

National Park Service

The National Park Service owns and operates park lands adjacent to Tomales Bay State Park lands on both sides of the bay (Point Reyes National Seashore on the west side and the Golden Gate National Recreation Area on the east side).

The 72,000-acre Point Reyes National Seashore reaches the Pacific Ocean to the west. The Park Service is currently conducting an update of its Point Reyes General Management Plan for the park.

The Golden Gate National Recreation Area (GGNRA) is the largest urban national park in the world, comprising over 50 separate sites covering 75,398 acres of land and water in the San Francisco Bay Area. Several GGNRA parcels are in close proximity to parcels comprising a portion of Tomales Bay State Park, along the east side of the bay. The GGNRA parcels in the Tomales Bay area are administered by the Point Reyes National Seashore.

California State Lands Commission

The State Lands Commission, established by the State Lands Act of 1938, administers some types of public land owned by the state, including tidelands and submerged lands such as those in and around Tomales Bay.

California Department of Fish and Game (CDFG)

The CDFG owns and operates the Tomales Bay Ecological Reserve, a large parcel at the south end of the bay managed for natural resource values.

Association of Bay Area Governments

Marin County is included within the Association of Bay Area Governments (ABAG). The Association is one of more than 560 regional planning agencies across the nation working to help solve problems in areas such as land use, housing, environmental quality, and economic development.

Marin County Community Development Agency

The Marin County Community Development Agency completed a Countywide Plan in 1994 to address land use and resource management issues within the county. This plan is in the process of being updated; the revision is scheduled to be completed in 2004. In August 2002, a draft report was available from the county focusing on key trends, issues and proposed strategies to be used to update the Countywide Plan. Included in this report is current information regarding open space, trails, and parks and recreation. The report stresses the need for all public land management agencies in the county to develop a common vision for open space and trails, and a shared role in a regional approach to land management. The report identifies a high rate of use of existing recreational facilities in the county. It states that increasing cultural diversity, demand for age-related recreational facilities, and a countywide need for increased camping opportunities, among other needs, will be emphasized in the new planning effort.

The Marin County Community Development Agency is also spearheading an effort to update the Marin County Local Coastal Program. The Local Coastal Program is administered under the California Coastal Act. Implementation of Coastal Act policies is accomplished primarily through the preparation of local coastal programs (LCPs) that are required to be completed by each of the 15 counties and 58 cities located in whole or in part in the California coastal zone. An LCP includes a land use plan (LUP) which is the portion of the Countywide Plan most relevant to this park planning process. The programs in the LCP govern decisions that determine short and long term conservation and use of coastal resources. The schedule for updating local LCP's coincides with the schedule to update the Countywide Plan. The county was in a public outreach process to help determine planning issues for the LCP's through March 2003, and is now developing land use policies. The updated LCP's and Marin Countywide Plan will be taken to the County Board of Supervisors and the California Coastal Commission in 2004 for approval.

The Marin County Community Development Agency has jurisdiction over the small unincorporated settlements around Tomales Bay, including Tomales, Point Reyes Station, Marshall, Olema, and Inverness. The county has prepared Community Plans for 16 plan areas to supplement the Countywide Plan, incuding relevant information regarding land use, population and growth, transportation, housing, jobs and environmental protection.

Marin Open Space District

The Marin Open Space District (MOSD) was established in 1972 by public vote for the purpose of acquiring and managing areas of natural landscape primarily for environmental protection and public open space. The Marin Countywide Plan of 1994 states that the MOSD should "preserve lands which are of unique importance to county residents, but which are outside the boundaries of State and Federally-protected properties." Since its inception, the MOSD has acquired many properties, generally in the central and southeast areas of the county. The closest MOSD properties to Tomales Bay State Park are the Gary Giacomini, French Ranch, Roy's Redwoods, and Maurice Thorner Memorial Open Space Preserves approximately 10 miles to the southeast of the south end of Tomales Bay.

Marin Agricultural Land Trust

The Marin Agricultural Land Trust was founded in 1980 by a coalition of ranchers and environmentalists to preserve farmland in Marin County. It acquires agricultural conservation easements on farmland in voluntary transactions with landowners. It has protected more than 32,000 acres of land in the county, including lands abutting Tomales Bay State Park on the east side of the bay.

Marin County Resource Conservation District

The Marin County Resource Conservation District is the local branch of the National Resources Conservation Services, part of the U.S. Department of Agriculture. The District procures funding through the Resource Conservation and Development Program for projects related to: 1) Land Conservation, 2) Water Management, 3) Economic Development, and 4) Community Sustainability.

The purpose of the Resource Conservation and Development (RC&D) Program is to accelerate the conservation, development, and utilization of natural resources, improve the general level of economic activity, and to enhance the environment and standard of living in designated RC&D areas. It improves the capability of state, tribal, and local units of government and local nonprofit organizations in rural areas to plan, develop, and implement programs for resource conservation and development. Current program objectives focus on improvement of quality of life achieved through natural resources conservation and community development which leads to sustainable communities, prudent resource development, and the management and conservation of natural resources. RC&D areas are locally sponsored areas designated by the Secretary of Agriculture for RC&D technical and financial assistance program funds.

California Coastal Conservancy

The California Coastal Conservancy is a state agency established in 1976 to purchase, protect, restore, and enhance coastal resources and to provide public access to the shore. It works in partnership with local and other public agencies, nonprofit organizations, and private landowners to achieve goals such asbuilding trails and other public access facilities and restoration and enhancement of wetlands and other wildlife habitat. The Conservancy has several completed and current projects in and around the Tomales Bay area, including stream restoration and agricultural easements projects.

The Nature Conservancy

The Nature Conservancy of California is a non-profit conservation organization whose mission is to preserve California's natural heritage. It acquires large natural areas so that native species can survive and thrive, and it helps secure scenic open spaces that provide Californians with opportunities for recreation. The Conservancy has acquired properties in Marin County, one of which abuts all three Inverness parcels at Tomales Bay State Park.

The National Audubon Society

The National Audubon Society owns several properties in the area around Tomales Bay that are part of the Audubon Canyon Ranch wildlife sanctuary system. The Audubon Society's mission is to preserve, protect, and manage properties for native plant and animal species enhancement, to educate the public about the natural environment, and to support research and conservation efforts that enhance the preservation and management of the natural resources on their lands. Their Cypress Grove Preserve at the northeast end of Tomales Bay abuts Tomales Bay State Park's Cypress Grove Area on its south side.

Tomales Bay Watershed Council

The Tomales Bay Watershed Council is a group made up of local organizations and landowners, businesses, government agencies, and others dedicated to improving the water quality of Tomales Bay. The Water quality standards of the Regional Water Quality Control

Board's Basin Plan have been exceeded in the bay, causing the listing of the bay as impaired under the federal Clean Water Act, section 303(d). The Watershed Council's purpose is to create a management plan to preserve and protect Tomales Bay's water and land resources for sustainable uses by agriculture, aquaculture, business, environmental, recreation, and residential interests. A first draft of a Watershed Stewardship Plan was completed in April 2002. Over the next few years, regulatory requirements and Best Management Practices will be developed to help meet the federal goals for water quality in the bay.

Inverness Public Utility District

The Inverness Public Utility District supplies drinking water for the community of Inverness and owns watershed lands adjacent to park parcels on Inverness Ridge. It also operates the Inverness Volunteer Fire Department.

Tomales Bay Association

The Tomales Bay Association (TBA) is a grass roots community-based organization that is involved in a range of community and environmental activities. Much of their recent work has revolved around controversial planning and legal issues. TBA has also been involved with salmon habitat restoration projects, public education, and local planning project reviews.

Eastshore Planning Group

The Eastshore Planning Group is an organization comprised of residents of the community of Marshall and vicinity that is concerned with issues affecting local area residents. It works with local and state agencies to address septic and other planning issues in the area.

Regulatory Agencies and Influences

United States Army Corps of Engineers (USACOE)

The USACOE is mandated to regulate certain types of activities in wetlands and waters of the U.S. under the following sections of Federal law: 33 CFR – Navigation and Navigable Waters (COE); 40 CFR – Protection of Environment (EPA); Section 9 of the Rivers and Harbors Act of 1899; Section 10 of the Rivers and Harbors Act of 1899; Section 404 of the Clean Water Act; and Section 103 of the Marine Protection Research and Sanctuaries Act of 1972. Under these sections, the USACOE requires permits for the discharge of dredged or fill material into any water of the U.S. or wetland under its jurisdiction. A permit from USACOE must also be obtained for any and all structures, whether permanent or temporary, that are planned to be in or over any navigable water of the U.S. and those that affect the course, location, or condition of the water body. Types of projects requiring permits from the USACOE include: placement of wharves, dams, dikes, pilings, weirs, breakwaters, jetties, bank protection, aerial or subaqueous power transmission lines, intake or outtake pipes, permanently moored floating vessels, tunnels, artificial canals, boat ramps, aids to navigation, and any other permanent or semi-permanent obstacle or obstruction. Permits are also required from the USACOE for any project that requires dredging of, or placement of fill into, any wetland or water of the U.S. and for the transportation of dredged material for the purpose of dumping it into ocean waters.

California Coastal Commission

The California Coastal Commission was established by voter initiative in 1972 and made permanent by the Legislature in 1976 to regulate land and water uses in the coastal zone that are consistent with the policies of the Coastal Act. Virtually any development project or activity within the coastal zone requires a coastal development permit from the Coastal Commission. This applies to projects proposed by both private and public entities within the coastal zone. In some cases, local agencies such as cities or counties have developed a Local Coastal Plan (LCP). Where an LCP is in effect and has been approved by the Coastal Commission, the local agency may have the authority to issue the coastal act permit for the development. Marin County has a Coastal Commission-approved Local Coastal Plan (1980) that is currently being updated. Coastal Act permits for all proposed projects within Tomales Bay State Park should, therefore, be obtained from Marin County under their approved LCP prior to project implementation.

Regional Water Quality Control Board (RWQCB)

The San Francisco Regional Water Quality Control Board is the office that has jurisdiction over relevant projects occurring within Tomales Bay State Park. A permit from the RWQCB is required for all projects requiring a USACOE Section 404 (Clean Water Act) permit or a California Department of Fish and Game (CDFG) Section 1601 (i.e., Streambed Alteration Agreement) permit. A permit from the RWQCB is also required for all projects that have the potential for direct or indirect project-related impacts to water quality, or if the project requires a construction storm water permit (i.e., for projects with greater than one acre of land disturbance).

California Air Resources Board

The California Air Resources Board is a part of the California Environmental Protection Agency, an organization that reports directly to the Governor's Office in the Executive Branch of California State Government.

The Mission of the California Air Resources Board is to promote and protect public health, welfare, and ecological resources through the effective and efficient reduction of air pollutants while recognizing and considering the effects on the economy of the state.

The major goals of the Board are to: 1) Provide safe, clean air to Californians, 2) Protect the public from exposure to toxic air contaminants, 3) Provide leadership in implementing and enforcing air pollution control rules and regulations, and 4) Provide innovative approaches for complying with air pollution rules and regulations.

In Marin County, air quality is generally good as there are no major air pollution sources, and prevailing winds are mostly off the ocean. However, since the winds blow eastward, sources of air pollution in Marin can contribute to air quality problems in other parts of the Bay Area and beyond.

California Department of Transportation (Caltrans)

The California Department of Transportation has jurisdiction over several of the transportation routes through Marin County. Highway 1 in West Marin is owned and managed by Caltrans. Permits are required for any construction work within a Caltrans right-of-way. The Department should notify Caltrans for review of any construction work planned within the watershed area of Department properties in which Caltrans property exists.

California Department of Forestry and Fire Protection (CDF)

CDF's mission emphasizes the management and protection of California's natural resources; a goal that is accomplished through ongoing assessment and study of the State's natural resources and an extensive CDF Resource Management Program. CDF oversees enforcement of California's forest practice regulations that guide timber harvesting on private lands. While Californians are learning more about the positive as well as the negative affects of fire, the prevention of large, damaging fires remains a priority for CDF.

California Department of Fish and Game (CDFG)

The CDFG is the trustee agency for the State's plant and wildlife resources. As such, they have regulatory authority over all of the State's special plant and wildlife species. Any project that has the potential for direct or indirect impacts to State-listed plant or animal species or Species of Concern require consultation with CDFG. Authorization for "take" of listed species (i.e., an Incidental Take Permit) and mitigation may be required.

Any project that involves work within a streambed or stream banks of any permanent or intermittent stream requires a permit from the CDFG under Section 1601 (i.e., a Streambed Alteration Agreement) of the Fish and Game Code. A Streambed Alteration Agreement is also needed for any project that will: divert, obstruct, or change the natural flow of any river, stream, or lake; use materials from a streambed; or result in the disposal or deposition of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into any river, stream, or lake. The California Department of Fish and Game leases parcels on the bottom of Tomales Bay to aquacultural concerns, and oversees herring fishing in the bay.

United States Fish and Wildlife Service (USFWS)

The USFWS has regulatory authority over Federal Threatened and Endangered plant and animal species and Species of Concern. Whenever a Federal-listed plant or wildlife species, Species of Concern, or designated (or proposed) critical habitat occurs within a proposed project area, DPR is required to consult with the USFWS on direct or indirect impacts to those species or their habitat as a result of the project. Consultation with the USFWS may result in the need for an *Incidental Take Permit* and/or required mitigation measures.

National Marine Fisheries Service (NMFS)

The NMFS has regulatory authority over Federal-listed marine or anadromous fish species and their habitats. Whenever a proposed project has the potential to result in direct or indirect impacts to a Federal-listed marine or anadromous fish or their habitats, DPR is required to consult with NMFS. Consultation with NMFS may result in the need for an *Incidental Take Permit* and/or required mitigation for project impacts to these species or habitats.

In 1971, the United Nations instituted a program to establish Biosphere Reserves across the globe, to serve as models for protection of the resources of wildlands and protected areas while providing for recreational use. One of these Reserves, the Golden Gate Biosphere Reserve, extends through the central California coastal region and seaward 30 miles. Included in this Reserve is the Gulf of the Farallones National Marine Sanctuary, part of a thirteen-unit national system established to protect significant waters and secure habitat for aquatic species, shelter significant cultural resources, and serve as valuable places for research and recreation. This 948-square-nautical-mile Sanctuary stretches from San Francisco to Bodega Bay, just north of Tomales Bay, and includes Tomales Bay. The Sanctuary is administered by the National Marine Fisheries Service in the U.S. Department of Commerce, National Oceanic and Atmospheric Administration.

National Park Service/ Point Reyes National Seashore

The National Park Service/ Point Reyes National Seashore patrols the surface waters of bay for enforcement of regulations regarding recreational use, and performs search and rescue operations and research in the bay's waters.

United States Coast Guard

The U.S. Coast Guard's Bodega Bay station oversees boating regulations, navigational buoys, and similar surface water matters in Tomales Bay.

Adjacent Land Uses and Ownership Patterns

Tomales Bay State Park consists of seven discontiguous properties along the west and east sides of Tomales Bay. The bay sits in a long bowl-shaped valley. The lands surrounding the bay sweep up to the Inverness Ridge on the west and to rolling hilltops on the east. The properties surrounding the scattered areas of the park are used for a variety of purposes by various owners.

Heart's Desire Area

The Heart's Desire Area is bounded on the north and west by the National Park Service's Point Reyes National Seashore. A large private in-holding with residences and a beach called "Shallow Beach" lies within this area. On the south side of the park are primarily private lands, residential properties, and watershed lands extending south and past the community of Inverness. Inverness lies approximately one mile south of the southern boundary of this area.

Inverness Area

The Inverness area consists of three large discontinuous parcels along the west side of Tomales Bay, east of the ridgeline above the community of Inverness.

The northwest parcel is a complexly-shaped property along the east side of the Inverness Ridge abutting Point Reyes National Seashore. The Philip Burton Wilderness Reserve within the National Seashore begins very close to this border and extends almost a mile to the west. Embedded within and on the peripehery of this state park parcel are watershed lands owned by the Inverness Public Utility District. To the east of this parcel the land slopes down to Sir Frances Drake Boulevard with a scattering of private and commercial ownerships in the unicorporated town of Inverness. To the south of this property is a large parcel owned by the Nature Conservancy, used primarily as watershed land. On the north end of this Conservancy parcel are a few small private inholdings.

The northeast parcel's east boundary touches Sir Francis Drake Boulevard in two palces and extends almost halfway to the top of the Inverness Ridge. This parcel is surrounded by private and watershed lands. The town of Inverness is just north of this parcel.

The southeast parcel descends steeply from the Inverness Ridge down to Sir Frances Drake Boulevard. The property extends to the boulevard in two points separated by private forested land. Across a narrow inlet in the bay sits the Tomales Bay Ecological Reserve, a large parcel at the south end of the bay owned and managed for natural resource values by The California Department of Fish and Game. The land south of this park parcel is primarily in private ownership, with the community of Inverness Park located approximately one mile from the southernmost end of the park property.

Millerton-Tomasini Point Area

This area consists of two large land "points" extending west into the bay, Millerton Point and Tomasini Point, and a large upland area to the east of Highway 1. Highway 1 bisects this area in a northwest/southeast direction, splitting the parcel into two shoreline "points" and the upland area. Private cattle and sheep ranching lands lie to the north, east, and south of this area with the bay defining the western park boundary. Along the bay, in the central portion of this area between the two "points," is a strip of land between the bay and the highway owned by a private oyster farming company. An area of private land lies in the center of the park's property, east of the highway. Adjacent to the south end of this area, the California Department of Fish and Game owns a strip of land along the bay.

Marconi Cove Area

To the immediate north of the Marconi Cove Area is a small privately-owned beach property and beyond that lies a small holding of the National Park Service's Golden Gate National Recreation Area (GGNRA). The Marconi Conference Center State Historic Park is located north of this GGNRA property, on 62 acres owned and operated by the Department as a nonprofit conference facility. Highway 1 is adjacent to the Marconi Cove area on its eastern side; private grazing lands are east of the highway. Tomales Bay forms the western border of this area. The State Lands Commission claims ownership of a strip of land along the bay side of this parcel, extending 75 feet into the parcel.

Cypress Grove Area

This area is a small, recent acquisition that constitutes the northernmost parcel in the park. Like the Marconi Cove area, this parcel is bounded by Highway 1 on the east, with private grazing and dairy lands to the east of the highway. To the west is Tomales Bay. South of the area lies the Audubon Canyon Ranch's Cypress Grove property, used by the Audubon Society as a natural preserve, for research, and for limited public access. North of this area is land owned by the National Park Service/ Golden Gate National Recreation Area.

Tomales Bay

On the east side of the bay, several oyster companies own portions of the shore and lease bay bottom parcels from the California Department of Fish and Game for their operations. The Tomales Bay Oyster Company owns the shoreline between Millerton and Tomasini Points and leases the bottom of the bay off that parcel. The Hog Island Oyster Company, based north of the community of Marshall, leases a bay bottom parcel off the northern end of Tomasini Point. Another company leases a portion of the bottom of the bay off the southern end of Marconi Cove from the Department of Fish and Game.

Regional Transportation

Local and Regional Transportation Agencies

The Marin Countywide Plan of 1994 indicated goals of reducing or maintaining existing traffic on West Marin roadways, with the objective of preserving the rural character of the area. This would be implemented by providing alternatives to automobile travel.

Metropolitan Transportation Commission

Located in Oakland, California, the Metropolitan Transportation Commission (MTC) is the transportation planning, coordinating, and financing agency for the nine-county San Francisco

Bay Area, including Marin County. MTC functions as both the regional transportation planning agency (a state designation) and for federal purposes, as the region's metropolitan planning organization (MPO). As such, it is responsible for the Regional Transportation Plan, a comprehensive blueprint for the development of mass transit, highway, airport, seaport, railroad, bicycle, and pedestrian facilities for the area.

In December 2001, MTC adopted the *2001 Regional Transportation Plan for the San Francisco Bay Area*, which specifies how some $87 billion (2001 dollars) of anticipated federal, state, and local transportation funds will be spent in the nine-county Bay Area during the next 25 years. The plan sets aside nearly $11 billion for major new rail and bus projects that will improve mobility and enhance connectivity for residents throughout the region.

The new Regional Transportation Plan provides funding for dozens of congestion relief projects on Bay Area freeways as well. These include widening U.S. 101 from Novato in Marin County to Windsor in Sonoma County. The plan also includes new bicycle and pedestrian trails around the Bay Area, and has a goal of connecting bicycles and pedestrians to existing and future rail and ferry facilities.

Of the total $87.4 billion in transportation revenues that MTC anticipates coming to the Bay Area during the next quarter century, 77 percent is devoted to maintaining and operating the region's existing road, highway, and transit network. The remaining 23 percent provides for new projects or system expansion. Roughly 77 percent of the total funding outlined in the plan will go to public transit operations, rehabilitation, and expansion.

Marin County Public Works Department

The Marin County Community Development Agency’s Public Works Department is developing an Integrated Transportation Plan to provide a comprehensive long range vision and practical implementation strategies for improving the range of public transportation choices for Marin County users. The goal of this effort is to enhance local mobility and create more liveable communities by increasing opportunities for county residents and workers to use transportation modes other than the automobile. The Plan focuses on bicycle, pedestrian, and bus routes and commuter rail lines and potential connections between these alternative transportation modes. The county has conducted a planning process to gather public preferences for Marin County transportation system improvements and expects to present document for approval to the Marin County Congestion Management Agency in late winter 2003. Implementation and funding strategies for any plan proposals must then be taken to voters for approval. Proposals for the West Marin area are limited to providing shuttle systems to developed areas in the eastern Highway 101 corridor and to retain Highway 1 as a two lane road, with additional turn pockets and other minor improvements added as necessary to improve traffic flow. This document’s overall vision for West Marin is to maintain its rural character. Bicycle trail connections between local communities is envisioned but no formal bicycle trail is planned along Highway 1.

Marin County Congestion Management Agency

The Marin County Congestion Management Agency (CMA) is a joint powers agency established between the county and cities to address Marin's transportation issues and to fulfill the legislative requirements of Propositions 111 and 116, approved in June 1990. These propositions require the development of Congestion Management Programs (CMP) designed to address existing and future transportation problems in urban areas of California. Each urban county is required to develop and bi-annually update a CMP.

West Marin Stagecoach/Golden Gate Transit

West Marin County is fairly isolated from the busy cities on the east side of the county. The county currently serves West Marin with two separate but connected public transit systems: the West Marin Stagecoach and the Golden Gate Transit bus system. The West Marin Stagecoach is a two-year demonstration service created by Marin County that aims to increase access for seniors, youths, and others to medical, civic, educational, work, and shopping sites throughout the western part of the county. The Stage was funded in its first year by the Marin County Transit District and the Federal Transit Administration. Second year funding is being sought, and will be based on the success of The Stage. The Stage's northernmost stops in West Marin are in Inverness on the west side of Tomales Bay and Point Reyes Station on the east side. The Stage connects to routes of the Golden Gate Transit bus system serving the communities on both sides of the bay. These bus routes come from the southern and eastern parts of the county to connect to stops in Inverness and Point Reyes Station, the farthest stops to the north in West Marin.

Sonoma Marin Area Rail Transit

To ease traffic congestion on the Highway 101 corridor in the eastern part of Marin County, the counties of Marin and Sonoma have formed the Sonoma Marin Area Rail Transit Commission (SMART) to develop an implementation plan for a commuter rail service for the two counties. The initial service would be a 68-mile route from Cloverdale in the north to downtown San Rafael in the south along the Highway 101corridor, with 11 stations in the major communities along the route. Other public transportation modes such as existing bus lines would connect to these stations and offer alternative ways to access the western portions of the county, including the Tomales Bay area.

National Park Service

The National Park Service currently operates a shuttle within the Point Reyes National Seashore on weekend days during the winter and spring, weather permitting.

Air Travel

The closest public airport to Tomales Bay is the Gnoss Field Airport near Novato, on the eastern side of the county, owned and operated by Marin County. The closest private airport is the San Rafael Airport in San Rafael, approximately 10 miles south of Novato on the eastern side of the county.

West Marin Visitor Protection and Emergency Services

Emergency services to Tomales Bay State Park visitors are primarily provided by the park staff.

Outside of park property, and as necessary for additional park support, emergency services for both visitors and residents of the area are coordinated through the Marin County Sheriff's Office of Emergency Services (OES). The OES is responsible for "developing, coordinating and supporting programs that prepare for, respond to, and recover from disasters and emergencies."

Since much of West Marin is unincorporated, law enforcement and crime prevention is the responsibility of the Marin County Sheriff's Office. The Point Reyes Patrol Division Sub-Station provides general law enforcement services in the communities adjacent to Tomales Bay State Park. The Marin County Sheriff Search and Rescue unit, a volunteer non-profit organization and part of the Field Services Bureau, also provides specialized rescue services to the area.

There are three hospitals providing basic emergency services in Marin County. Fire departments and privately owned companies also provide emergency medical services. Fire departments in the West Marin area near Tomales Bay State Park include the Point Reyes Fire Station located in Point Reyes Station and the Inverness Volunteer Fire Department. The Point Reyes Fire Station provides paramedic services, wildland and structural firefighting, traffic accident response, and hazardous material response. The communities served include Point Reyes Station, Olema, and Inverness Park.

On the east side of Tomales Bay, the Tomales Fire Station is located in the town of Tomales. Paramedic and lifesaving services, as well as wildland and structural firefighting, are provided. The service area includes the communities of Tomales, Dillon Beach, Marshall, and Chileno Valley.

The Marin County Fire Department has developed a Marin County Fire Management Plan that addresses the threat and prevention of wildfires in Marin County. Wildfire protection is provided by seven fire stations and two lookouts.

WEST MARIN RECREATION AND INTERPRETATION

Existing West Marin Recreation Facilities and Use Patterns

With approximately 133,360 acres dedicated to public open space, outdoor recreational opportunities are abundant within the environmentally diverse region of west Marin County. While most recreation users come from San Francisco and the surrounding bay region, visitors come from all across California to enjoy west Marin's outdoor opportunities. West Marin County is host to two of the top ten most-visited national parks in California and one of the top ten most visited state parks in California *(California Department of Parks and Recreation Bear Facts October 2002).* Popular recreation activities in west Marin include: camping, surfing, hiking, mountain biking, road biking, boating, fishing, horseback riding, wildlife viewing, clamming, swimming, windsurfing, kitesurfing, tide pooling, and beachcombing.

The majority of public recreation in west Marin County occurs within a mix of federal, state and county lands. Federal properties include the Golden Gate National Recreation Area (GGNRA), Point Reyes National Seashore, and Muir Woods National Monument. State lands include Tomales Bay State Park, Samuel P. Taylor State Park, Mount Tamalpias State Park, Marconi Conference Center, and Tomales Bay Ecological Reserve. The county of Marin has many properties within the Marin County Open Space District lands, Marin County Parks, and the Marin Municipal Water District lands.

The following agency documents involve current and future recreation planning in west Marin:

- Point Reyes General Management Plan
- Golden Gate National Recreation Area General Management Plan
- Muir Wood General Management Plan
- Mount Tamalpias General Plan
- Samuel P. Taylor General Plan
- Marin Countywide Plan
- Tomales Bay Watershed Stewardship Plan
- Marin Municipal Water District, Mount Tamalpias Road and Trail Management Plan.

A small portion of outdoor recreation occurs on private and non-profit owned lands, including: Audubon Canyon Ranch, private campgrounds, outdoor recreation guides and outfitters, and lands owned by the Boy Scouts of America.

The economy of west Marin is substantially supported by the popularity of outdoor recreation in the region. A steady flow of seasonal and off seasonal use supports businesses serving this recreation market. It is estimated that almost 8,000 jobs in Marin County were related to the tourism and recreation industry in 2000 *(California Division of Tourism, march 2002).* Bed and breakfast inns, hotels, campgrounds, hostels, tour guides, equipment rentals, restaurants, and gas stations profit from the outdoor recreation market in west Marin.

Camping

Eighty-six percent of available camping in west Marin occurs in private campgrounds. West Marin camping opportunities in state or federal campgrounds is extremely limited in both the number of sites and in the camping types. Of 187 available campsites in west Marin public parklands only 61 (all in S.P. Taylor State Park) are available for the most popular type of camping: car camping. Thirty-eight walk-in sites, where you walk less than 800’ from your car to the site) are available (mostly in Mount Tamalpais State Park). Only 12 group campsites and 20 boat-in sites are available. Fifty-four backcountry campsites are available (mostly in Point Reyes N. S.), the majority of which are open to use by hikers, trail bikers, and equestrians. Two exclusive equestrian sites are available.

This shortage of camping opportunities on public lands, where many campers prefer to be, is particularly evident during the peak use season, late spring through early fall. Many campers looking for remote sites, group sites, RV accommodations, and other types of camping opportunities are often disappointed to hear these facilities are either already full or do not exist.

Beach and Boat Access

Access to beaches and boat launches is an important element for visitors eager to recreate in or on the water. Water access in west Marin County primarily means water access to the Pacific Ocean and its bays. Popular access areas to the ocean are Bolinas Bay, Tomales Bay, Drakes Bay, and Bodega Bay.

West Marin Trails

West Marin has an extensive and diverse trail system catering to the high recreation demand in this region. With over 500 miles of single track trail and fire road this region has a complex system of trails that are developed and maintained by many different public agencies including Golden Gate National Recreation Area (GGNRA), Point Reyes National Seashore, Muir Woods National Monument, Samuel P. Taylor State Park, Mount Tamalpias State Park, Marin County Open Space District, Marin County Parks, and the Marin Municipal Water District. Although maintained by the agency on which the portion of the trail is located many of these trails either cross jurisdictional lines or connect to trails owned by other agencies.

The Bay Area Ridge Trail and the San Francisco Bay Trail are two regional trails systems with segments in Marin County. The Bay Area Ridge Trail is a 400-mile multiple-use trail connecting parks and preserved open spaces along the ridgelines surrounding California's San Francisco Bay. More than half of the trail is complete, open to the public, and in use. When complete, the San Francisco Bay Trail will be a continuous 400-mile recreational corridor that will encircle the entire Bay Area, connecting communities to each other and to the Bay. It will link the shorelines of all nine counties in the Bay Area and 47 of its cities. To date, 210 miles of the Bay Trail, or slightly more than half its ultimate length, has been developed. Many of the trails in west Marin are part of or connected to either the Bay Area Ridge Trail or the San Francisco Bay Trail.

The California Coast Trail is a proposed state trail that would traverse through west Marin. The coastal Trail would be a 1200-mile trail along the California coast from

Mexico to Oregon connecting cities and towns with historic sites and natural areas. Existing trails, routes, and beaches would be combined with new trail segments to form the trail's entirety. Current plans are underway to map where the Coastal Trail does and does not exist and to make plans for its completion.

Many of the trails in west Marin are part of or connected to either the Bay Area Ridge Trail, California Coastal Trail or the San Francisco Bay Trail. Groups such as the Bay Area Open Space Council, Coastwalk, and the Bay Area Ridge Trail Council are currently promoting the development and connection of trails in Marin County. Additions of hiking trails, mountain biking trails, equestrian trails, and multiuse trails to the vast trail system of west Marin are expected to continue as regional populations and the desire for recreation opportunities increase.

West Marin Interpretation

Point Reyes National Seashore

The neighboring Point Reyes National Seashore (PRNS) features similar cultural and natural resource stories as Tomales Bay. But as a park of national significance PRNS provides far greater interpretive opportunities for a more varied audience. Its interpretive facilities offer opportunities for visitors to obtain in-depth information on natural and cultural resources found in the park and to become familiar with ecological and environmental principles. An education curriculum provides hands-on activities that enable students to observe and understand the resources found at Point Reyes.

The Shore's three Visitor Centers receive around 700,000 visitors a year. The Bear Valley Visitor Center provides the primary means for visitors entering PRNS to obtain information enabling them to have a safe, enjoyable, and educational experience in the park. The Center contains an extensive display of plant and animal communities found within the park, and in its auditorium slide shows, orientation movie, and a movie about the Point Reyes Lighthouse are available upon request. Natural history books, cards and posters are for sale in the bookstore. The Ken Patrick Visitor Center, located at Drakes Beach, focuses on 16th-century exploration and the marine environment. The Point Reyes Lighthouse and Visitor Center contains exhibits on whales, wildflowers and lighthouses. To reach the Lighthouse visitors go down the hill by 300 stairs, and find the Lens Room open when staffing is available.

<u>Self-Guiding Activities around Point Reyes National Seashore</u>

Interpretive trails include the short informative Earthquake Trail with interpretive panels on the 1906 earthquake and the San Andreas Fault zone, and the Woddpecker Trail with exhibits highlighting the flora and fauna of the area. At the Morgan Horse Ranch, a working horse ranch, the trailside exhibits focus on the characteristics, breeding and history of Morgan horses. Kule Loklo, the replica Coast Miwok village has trailside exhibits describing the traditional ways of life of the first inhabitants of the Point Reyes peninsula.

Guided Activities

Park Rangers lead programs covering a wide range of topic including geology, Coast Miwok culture, lighthouse history, and other topics. Over 4,000 students a year participate in ranger-led education programs. Their most popular program allows students to visit Kule Loklo, the replica Coast Miwok village. The other programs offer students a variety of experiences.

PRNS's outdoor classroom and learning laboratory for the study of geologic and ecological processes fosters a greater understanding of and caring for public lands. Their wide variety of educational programs are curriculum-based and all activities are linked to the California and National Educational Standards.

Park staff and other specialists provide hands-on training to teachers. These teacher workshops connect students to science, math and history through a diversity of park resources, curricula materials, and important tips to ensure successful field trip. Teachers may choice from a variety of workshops covering topics appropriate for their grade level. Some topics include water ecology and water quality, Coho restoration project, habitats restoration, the San Andreas Fault, steam ecology, the park's animals, their habitats and adaptations. Continuing Education Units as well as academic units are available through Sonoma State University.

Curricula titles available include: *Discovering Northern Elephant Seals, Observing Pacific Gray Whale, Marine Life, Lighthouse, Habitats Restoration, Uncovering the San Andreas Fault, Identifying Resident Birds, Monitoring Creek Health, Wild About Wildlife, and Kule Loklo.*

PRNS Park Partners

Point Reyes National Seashore Association, a nonprofit organization incorporated in 1965, assists the PRNS by providing quality educational materials, seminars and classes to park visitor. The Association works in coordination with the National Park Service. The ongoing mission of the Association is preserving the wilderness at the park and educating the public about the environment. Last year, the Association sponsored more than $150,000 worth of preservation projects in the park and more than 4,000 children and adults attended their environmental education programs through Field Seminars, Clem Miller Environmental Education Center programs, and Point Reyes Summer Camp. Point Reyes Field Seminars provides educational experiences that increase people's respect and reverence for the natural world, as well as increasing their understanding and appreciation of the significance of Point Reyes National Seashore.

The Clem Miller Environmental Education Center functions as a living and learning facility where students and teachers can explore the natural world. The main building is a 4,500 square foot cedar lodge complete with a dining hall, science room, teacher's room, a central bathroom facility with heated showers, and a fully equipped kitchen. Four 16-person and one 20-person dormitory style cabins accommodate up to 80 people. A separate building has an infirmary, laundry room, two bunkrooms and a manager's office. This building and the main lodge, bathrooms and two cabins are wheelchair accessible. The Center has no staff except the manager. Therefore, it is the responsibility of the visiting school group to provide their own program and services. This includes shopping and preparing food, cleaning the Center, providing adult supervision for students, and developing and implementing an environmental education program.

The Miwok Archeological Preserve of Marin (MAPOM) is a park partner supporting Kule Loklo with volunteers, demonstrators of California Indian skills, and festival financing. They provide adult classes in California Indian skills in the spring and fall. Their experienced instructors teach flintknapping, arrowmaking, basketry, hide tanning, and other native skills.

Point Reyes Bird Observatory Conservation Science

The PRBO Conservation Science education staff teaches children and the general public about bird conservation science, illustrating basic environmental principles through the wonder of birds and inspiring environmental stewardship. More than 10,000 people observe Palomarin field biologists at work annually at their Visitor Center in the Point Reyes National Seashore. PRBO'S Education and Outreach Programs also reaches several thousand students each year in the classroom and at field sites throughout the West.

Audubon Canyon Ranch

Audubon Canyon Ranch (ACR) is a system of wildlife sanctuaries in Northern California. Part of ACR's mission includes educating children and adults about the natural environment and the need to protect it, through the use and enjoyment of ACR sanctuaries. Bolinas Lagoon Preserve, a thousand-acre wildlife sanctuary about 12 miles south of Tomales Bay, has mixture of natural communities with Douglas fir, coast redwood, California bay, grasslands, coastal scrub, and chaparral, streams, ponds, and freshwater marsh habitats. ARC was founded in 1962 to save the heron and egret nesting colony at this site.

Bolinas Lagoon Preserve supports a major heronry of Great Blue Herons and Great and Snowy Egrets. The nesting egrets and herons are a main attraction of this preserve. These birds return each spring to nest in the tops of the tall redwood trees and find ample food for themselves and their young in the shallow waters of Bolinas Lagoon and nearby tidelands. The preserve is self-guided with spotting scopes provided for viewing the nesting colony. Ranch Guides are stationed throughout the preserve to answer questions and provide information about the wildlife.

Cypress Grove Research Center

Audubon Canyon Ranch also has a developing research facility on the east shore of Tomales Bay called Cypress Grove Research Center. Through Cypress Grove Research Center, ACR studies wintering shorebirds, monitors waterbirds on Tomales Bay, investigates processes for restoration of coastal marshes, tracks the reproductive performance of heron and egret colonies throughout the northern San Francisco Bay Area, and analyzes behaviors of Common Ravens. ACR owns and protects almost 500 acres of lands on Tomales Bay. Cypress Grove Research Center does not offer public access except during community events, workshops or seminars.

Environmental Education Council of Marin

Environmental Education Council of Marin (EECoM) is made up of more than 60 environmental and community groups, educators and businesses who are committed to increasing the scope of environmental education in Marin County. EECoM mission is to build an ever-increasing coalition of youth and adults committed to preserving the diverse environments in Marin County through education, stewardship, and sharing of resources.

Miwok Archeological Preserve of Marin

Miwok Archeological Preserve of Marin (MAPOM) was founded in 1970 as a result of community involvement in the excavation of a Coast Miwok village site. Through a diverse range of programs and cooperative efforts, with groups such as the Federated Indians of Graton Rancheria (Coast Miwok) and the Point Reyes National Seashore, MAPOM seeks to promote a better understanding of the Coast Miwok Indians, the first people of Marin and southern Sonoma Counties. MAPOM undertakes a diverse array of programs that promote awareness and understanding of the cultural, political and social issues facing the Coast Miwok today, as well as to preserve traditional habitat and skills. Many projects are undertaken in collaboration with the Federated Indians of Graton Rancheria (Coast Miwok) and the National Park Service.

Marin Museum of the American Indian

The Marin Museum of the American Indian in Novato is dedicated to cultivating an awareness and understanding of Native American history and culture. Their lecture series covers all aspects of Native American art and culture. The Museum's gallery features rotating exhibits and demonstrations by contemporary Native artists. A native plant garden offers a living display of the medicines and materials of the California Indians.

Over half of the Museum's visitors are school age children. Most of the children participate in the School Educational Programs. Students come from schools throughout Marin county, Sonoma county, the general Bay Area including San Jose, and as far away as Salinas or Stockton. Each year, more than 10,000 students participate in their program. The most popular presentation is the Miwok Cultural program. The educational programs include an outdoor segment to familiarize the students with the Miwok environment, tour the main gallery and an educational room filled with hand-on replicas. The Camp Coyote Summer Camp compliments the school year programming.

Marin WildCare and Terwillinger Education Center

WildCare was created in 1995 as a result of the merger of two long standing Marin County non-profits: The Terwilliger Center for Nature Education and the California Center for Wildlife, a wildlife hospital and museum. As a combined entity they heal and rehabilitate wildlife today and reach out to the stewards of tomorrow through education and environmental appreciation. WildCare provides an opportunity for both adults and children to experience a variety of wildlife both living and through the educational tools made available in the Exhibit Hall.

Terwilliger Nature Camp adventures teach a respect for the environment with weekly day camp programs developing environmental knowledge and values. Weekly topics and hikes immerse children in specific nature themes.

Each year more than 6,000 San Francisco Bay Area school children are introduced to the wonder of nature through class field trips led by WildCare Terwilliger Nature Guides. Since, 1970 Nature Guides have led hands-on, multi-sensory discovery walks in natural habitats in Marin and Sonoma County.

The Bolinas Museum

The Bolinas Museum features historical artifacts and contemporary art of coastal Marin County. The Museum's permanent collection includes Miwok artifacts and memorabilia from Bolinas and West Marin's history as a supplier of ships and provender to San Francisco during the 19th century, as well as photographs and objects from Bolinas' past. Changing exhibitions of the contemporary and historical art of the coastal villages are featured in the Museum's galleries.

Marin Agricultural Land Trust

Marin Agricultural Land Trust (MALT) is a nonprofit conservation organization created in 1980 by a coalition of ranchers, environmentalists, and community activists. As the first land trust in the United States to focus on agricultural land preservation, MALT preserves farmland in Marin County through conservation easements, public education and advocacy. MALT’s public education outreach includes hikes, tours of farms, ranches and gardens, and educational programs.

Tomales Regional History Center

Tomales Regional History Center is an archival center preserving history of the settlements in north Marin County. The Center features lectures and social events highlighting the life and times of these settlements.

Marin County Open Space District

Marin County Open Space District's (MCOSD) mission is to enhance the quality of life in Marin County through the acquisition, protection, and responsible stewardship of ridgelands, baylands and environmentally sensitive lands identified for preservation in the Marin Countywide Plan. MCOSD lands are managed to protect and enhance their natural, undeveloped character while accommodating many outdoor recreational and educational pursuits. Rangers and District Naturalists lead walks covering topics as diverse as the night sky, Marin's history, tidepools, reptiles, shorebirds, bird migration, and restoration ecology. These guided walks take place on District lands, Point Reyes National Seashore, and Tomales Bay State Parks.

Samuel P.Taylor State Park

Samuel P. Taylor State Park provides three major interpretive programs. Campfire, nature hikes and Junior Rangers programs can be found at most state parks with a campground. From Memorial Day weekend through Labor Day weekend up to five campfire programs per week occurred at Taylor. Budget and staffing issues have reduced that to one a week this past summer. Topics range from the ever-popular redwood ecology to fire management in Marin. Nature walks are given once a week during the same time frame as the campfire programs. Redwood ecology and other natural resource topics are popular themes, but they also do them on the historical significance of Samuel P. Taylor and his "Taylorville" enterprises. The Junior Ranger program was not conducted last summer due to staff shortages. A self-guided version of the program covered various ecological and historical topics on a general basis but is not site specific. Two self-guided hikes interpreting Redwood ecology and the history of Samuel P. Taylor's paper mill follow trails with numbered posts corresponding with a brochure.

They give approximately 20 special school talks or walks a year to various school and scouting groups that make requests. The majority of these walks are on the ecology of the park and its wildlife. Recently an outreach program began with Lagunitas school brings the parks natural, historic and cultural features into the core curriculum of the sixth grade science class.

The Lagunitas watershed accounts for 10 percent of California's spawning coho salmon population. This past April the coho salmon was raised to the status of "endangered" on the California endangered species list and has a listing of "threatened" on the federal endangered species list. The park responded to the extra interest in the salmon and steelhead populations by offering "salmon walks" along the creek during the spawning months of October through April. The walks provide a close-up look at adult coho, chinook and chum salmon as well as adult steelhead trout. The walks interpret the life cycle of the fish and focus on the active spawning taking place. This year the park installed interpretive panels at seven different locations along the creek that cover the same kind of information given in the walks. The connection these fish have between Taylor and Tomales Bay is significant in two ways. First, the fish migrate through both parks (Lagunitas Creek and Tomales Bay) on both their out going and in coming migration paths. Second, the Coast Miwoks that lived at Tomales Bay State Park fished in Lagunitas Creek. As thousands of fish came up the creek the Coast Miwoks would use various methods to trap the salmon as they migrated through narrow rock passages and smaller tributaries.

Salmon Protection and Watershed Network

The Salmon Protection And Watershed Network (SPAWN) works to protect threatened coho salmon and steelhead and the environment. SPAWN uses a multi-faceted approach including environmental education, grassroots action, habitat restoration, policy development, media campaigns and litigation.

Trained docents conduct outreach programs to view spawning salmon and educate the public about salmon natural history and watershed conservation. More than 700 people in the past year have participated in SPAWN sponsored walks to view spawning coho salmon in the Lagunitas Watershed. Participants were educated on issues related to the natural history, conservation and individual actions that could be taken to recover species. SPAWN continues to organize and participate in forums and community outreach events, operates a regularly updated website, www.spawnusa.org, and publishes a newsletter.

The StreamKeeper Program conducts spawning surveys, juvenile fish rescue and relocation, and water quality monitoring on the watershed creeks. Students participate in SPAWN's many coordinated activities. SPAWN is working toward constructing a fish viewing interpretive center to educate thousands of visitors per year and help create a constant and consistent pool of volunteers.

Analysis of Regional and Park-wide Planning Issues and Opportunities

General plans make two kinds of proposals: namely, proposals to resolve existing and potential problems (issues) and proposals to realize unmanifested potentials (opportunities). There is a close relationship between the park's issues and its opportunities. A clear definition of the park's unresolved issues will shed light on how we might best resolve these problems and also realize the park's full preservation and recreation potential.

This section summarizes key issues that were identified by the planning team during the planning process. The intent is to highlight important regional and parkwide problems and opportunities that will be addressed by the park-wide and specific park area. These issues are presented in two categories: 1) principal issues needing resolution, and 2) important concerns that are not currently problems but could become problems if they are not managed well.

This planning effort will focus on recommending appropriate park land uses and desired recreational access and opportunities and on improving the protection, preservation, and management of the park's unique natural, cultural, educational, and aesthetic resources. The following are the primary planning issues this process will focus on resolving, either through overall parkwide management guidelines or through management guidelines for specific park areas. These goals and guidelines will be found in the Plan Section.

Principal Issues needing Resolution

Recreational Demand and Visitor Safety, Facilities, and Services

Acquisitions and Park Connectivity

Tomales Bay State Park is currently comprised of seven disconnected land parcels (the main headquarters unit and three Inverness Ridge parcel groupings on the west side of the bay and three disconnected parcels on the east side). Park properties on the east side of the bay are relatively recent acquisitions (the Millerton Point uplands, Marconi Cove, and Cypress Grove parcels).

The scattered ownership pattern of the park's properties represents another primary general plan challenge: namely, where and how to provide visitor recognition of and access to these separate park lands as well as where and how to provide operational, interpretive, visitor protection, and resource protection services. The resources, access points, and recreational opportunities vary greatly among these land parcels.

An important goal of the plan is to coordinate the planned uses of these parcels so they can, as much as possible, function as a whole despite their physical separation. The variety of existing resources, access points, and opportunities can be used as a basis for planning a variety of uses that function well together. Public recognition of the various parcels can be improved through signage.

In addition, the plan will address the issue of potential land acquisition in areas surrounding the existing state park parcels.

Visitor Facilities and Services

Recreational use patterns have evolved without the benefit of a general plan or consideration of regional facilities or needs. Recreational demand in the West Marin area will grow as the Bay Area population grows. One of the major issues for the general plan is how to accommodate or otherwise reasonably deal with this expected rise in recreational demand without negatively impacting the natural values State Parks is committed to preserving. Coordination with other recreation providers, especially the National Park Service is critical to successfully dealing with this issue. Expanding recreational opportunities in parts of the recently acquired properties along Highway 1 on the east shore is another key to meeting recreational need.

The plan will recommend appropriate land uses and desired recreational access and opportunities within the park's scattered properties on both sides of the bay. The plan will consider the needs and opportunities for improving recreational activities, facilities, and visitor experience. The plan will address the adequacy and possible improvement or addition of recreational facilities such as trails, scenic wayside pullouts, group and individual picnic areas, interpretive exhibits, boat ramps, campgrounds, and restrooms. The plan will also consider recommendations to improve park entrances, circulation, and parking as well as visitor services and concessions.

Few public camping facilities currently exist in the West Marin area so this plan will explore possibilities for camping facilities that are sensitive to viewshed and resource values.

<u>Visitor Safety and Natural Hazards</u>

The plan will make recommendations to improve visitor safety regarding hazards such as wildfire, landslides, and earthquakes. The plan will consider recommendations to improve the park's cooperation with fire control agencies.

<u>Park Operations</u>

The plan will make recommendations to improve employee housing, administration, and park maintenance facilities. The current park maintenance facility in the Heart's Desire Area is considerably distant from the park's land parcels on the east side of Tomales Bay.

Sensitive Species, Biocorridors, and Core Habitat Area Issues

The park is currently a refuge for a number of sensitive plant and animal species of terrestrial, estuarine, intertidal, and marine environments. The plan will make recommendations to enhance these habitats and biocorridors, restore sensitive plant and animal populations, and protect these and other less sensitive species. This plan will evaluate visitor impacts on sensitive natural resources and may recommend special protection for certain areas of the park to better protect significant resources within the park.

In order to sustain wildlife populations, it is important to preserve wildland habitat and the connection between habitats fragmented by human disturbance and development. Land clearing activities, such as logging, agricultural production, and urban development, has produced a patchwork of disconnected natural plant communities. The quality of existing habitats is continually threatened by natural forces and human activities and influences, such as fire suppression and the introduction of exotic plants. Biocorridors, which link these natural habitats, may also become degraded or destroyed by various human or natural events thus rendering the corridor less unusable for some species. Restoring large habitat ecosystems and biocorridors helps sustain and promote wildlife populations.

Maintaining movement corridors in fresh water and marine habitats is important for the aquatic organisms, and to allow the circulation of the ocean nutrients and fresh water that is vital to the health of an aquatic ecosystems such as Tomales Bay.

In order to maintain wide ranging species like mountain lions in Tomales Bay State Park, significant biocorridors need to be assessed in cooperation with adjacent public and private landowners such as Marin County, National Park Service, Golden Gate National Recreation Area and others.

The following linkages are known to be important and require more analysis and study:

- Linkages through the Lucas Valley for deer and some predators such as mountain lions and bobcats.
- Connection between the Point Reyes Peninsula and the mainland.
- Connection of Bishop pine forests on State Park land with nearby forests on National Park Service land near Pierce Point Road and Sir Frances Drake Blvd. This is especially important for the Northern Spotted Owl and Point Reyes Mountain Beaver populations.
- Contiguous Tomales Bay shoreline and underwater marine habitats.
- Riparian corridors with continuous vegetative cover offering streamside shade and cover.
- In-stream movement corridors for aquatic species with unimpaired connection to and within the Tomales Bay.
- Critical core habitat and migratory corridors for sustainable population dynamics of California red-legged frogs and other amphibians.
- In addition, assessments should be made of habitats and linkages that encourage the introduction of unwanted species or detrimental predators that would negatively impact resident populations.

Water Quality, Estuaries, Erosion, and Beaches

The quality of the water, the marine resources, and the recreational opportunities of Tomales Bay are largely determined by the quality of the upland vegetation and land uses as well as the health of the bay's streams, estuaries, beaches, and intertidal areas. This plan will make recommendations to improve the quality of the park's stream, estuary, and bay waters and to reduce erosion and heal erosion scars.

Much of the park's land borders on and includes the fragile and dynamic marine resources of Tomales Bay and all of properties of the park lie within the Tomales Bay Watershed. The Tomales Bay Watershed Council is completing the Tomales Bay Watershed Plan to improve the water quality of Tomales Bay and to restore the environmental integrity of the entire watershed. The Regional Water Quality Control Board (RWQCB) has designated Tomales Bay as an impaired watershed. This general plan will recommend actions to support the water quality goals of the Tomales Bay Watershed Plan. Erosion, particularly on the park's recent acquisitions on the east shore and from grazing areas in the watersheds above park lands, may be negatively affecting terrestrial and water resources. The plan will make recommendations to mitigate these problems.

Vegetation and Fire Management

The plan will make recommendations to help restore native populations and natural vegetation processes, improve recreational and visual values, and reduce wildfire danger.

Desired Condition for the Park's Plant Communities

The plan will describe the desired condition or successional stage for the park's major plant community types. Natural fire and fire control as well as grazing and grazing exclusion has played an important role in shaping the character of the park's vegetation.

The park's mature Bishop pine forest is partly fire-dependent for regeneration and the grassland areas will likely become brushland without occasional burning. Prescribed burning and wildfire are issues of concern given the presence of residences in the area. Though this plan will not develop a fire or vegetation management plan it will provide goals and guidelines needed to create such future plans.

Exotic Plants

Exotic plant species are negatively affecting the park's native plants, animals, and habitats. Sample invasive exotic plant species include Monterey pines, acacia, eucalyptus, Cape ivy, and broom. The plan will provide goals and guidelines to help guide the management of exotic plants and may propose the future development of an exotic plant management plan.

Regional, Community, and Inter-agency Relations

This general plan will evaluate Tomales Bay State Park in a regional context. The plan will make recommendations to improve the park's ecological, biological, viewshed, recreational, and educational relationships with neighboring lands, land-uses, landowners, jurisdictions, services, and facilities. This includes coordinating regional resource and recreation planning, development, and management issues such as trail connections, boat access, campground development, land acquisition, water quality, wildfire and prescribed burning issues, exotic plants and animals, sudden oak death, biocorridors, traffic issues, and the scenic and aquatic resources of Tomales Bay.

To properly plan for and manage the seven scattered parcels of TBSP, the plan must define the complex relationship of management responsibilities and ownership patterns of adjacent terrestrial and aquatic properties.

The plan will make recommendations to enhance interagency coordination concerning the regional management of ecological, biological, recreational, cultural, and educational resources. Numerous federal, state, regional, and county agencies have overlapping jurisdictions and responsibilities involving the terrestrial and marine aspects of the park. The park is included in the *Golden Gate Biosphere Reserve*, designated by the United Nations as an area having international importance to the conservation, research, and education of the earth's biodiversity. The shores of the park and all of Tomales Bay are included in the Gulf of the Farallones National Marine Sanctuary. The regional relationship of State Park's jurisdictions and responsibilities to those of other agencies will be documented.

Important but non-problematic Values

Aesthetics and Viewshed

Aesthetic resources and landscape viewsheds are important considerations. The plan will make recommendations to improve protection and management of the park's aesthetic resources and the area's unique sense of place.

Cultural Resources Management

The plan will make recommendations to improve protection and management of the park's archeological and historic resources. This plan will evaluate visitor impacts on sensitive cultural resources and may recommend classifying certain areas of the park as cultural preserves to better protect significant resources within the park.

Interpretation and Education

The plan will make recommendations to expand the park's interpretive and educational programs and facilities to keep pace with expanded recreational opportunities and facilities.

END OF APRIL 2003 PARTIAL DRAFT OF GENERAL PLAN